SEQUENCE LISTING

<110> Murray, Richard
      Glynne, Richard
      Watson, Susan R.
      EOS Biotechnology, Inc.

<120> Novel Methods of Diagnosis of Angiogenesis,
   Compositions and Methods of Screening for Angiogenesis
   Modulators

<130> 018501-000710US

<140> US 09/784,356
<141> 2001-02-14

<150> US 60/148,425
<151> 1999-08-11

<150> US 09/637,977
<151> 2000-08-11

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13

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15

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16

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20

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22

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25

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26

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         <212> DNA
         <213> Homo sapiens

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27

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        <213> Homo sapiens

        <400> 29
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        <213> Homo sapiens

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34

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        <212> DNA
        <213> Homo sapiens
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35

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36

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<212> DNA
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<211> 2456
<212> DNA
<213> Homo sapiens

<400> 41

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37

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        <211> 4465
        <212> DNA
        <213> Homo sapiens

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43

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44

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45

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<213> Homo sapiens

<400> 49
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46
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        <213> Homo sapiens

        <400> 50
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gtgctactca tctttgctca ctatgcagtc ttttttaaga gagcagagag tatcagatgt      540
acaattatgg aaataagaac attacttgag catgacactt ctttcagtat attgcttgat      600
gcttcaaata aagttttgtc tt                                               622
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        <210> 51
        <211> 2500
        <212> DNA
        <213> Homo sapiens

        <400> 51
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47

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        <212> DNA
        <213> Homo sapiens

        <400> 52
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                                 48

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<212> DNA
<213> Homo sapiens

<400> 53
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<213> Homo sapiens

<400> 54
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53

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<211> 5059
<212> DNA
<213> Homo sapiens

<400> 67
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atttgacaaa tggaaaaaaa ggagtgtcca gaaaagagta gcagcagtga ggaagagctg     240
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63

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    <210> 68
    <211> 2279
    <212> DNA
    <213> Homo sapiens

    <400> 68

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                                    64

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tgacgccttc ccggcctgca aggtggagtt ctagccccat cgccgacacg ccccccactc    2220
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        <210> 69
        <211> 229
        <212> PRT
        <213> Homo sapiens

        <400> 69
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Leu Pro Pro Val Leu Leu Pro Gly Ala Ala Gly Phe Thr Pro Ser Leu
            20   25   30
Asp Ser Asp Phe Thr Phe Thr Leu Pro Ala Gly Gln Lys Glu Cys Phe
        35   40   45
Tyr Gln Pro Met Pro Leu Lys Ala Ser Leu Glu Ile Glu Tyr Gln Val
        50   55   60
Leu Asp Gly Ala Gly Leu Asp Ile Asp Phe His Leu Ala Ser Pro Glu
65   70   75   80
Gly Lys Thr Leu Val Phe Glu Gln Arg Lys Ser Asp Gly Val His Thr
                85   90   95
Val Glu Thr Glu Val Gly Asp Tyr Met Phe Cys Phe Asp Asn Thr Phe
            100   105   110
Ser Thr Ile Ser Glu Lys Val Ile Phe Phe Glu Leu Ile Leu Asp Asn
        115   120   125
Met Gly Glu Gln Ala Gln Glu Gln Glu Asp Trp Lys Lys Tyr Ile Thr
        130   135   140
Gly Thr Asp Ile Leu Asp Met Lys Leu Glu Asp Ile Leu Glu Ser Ile
145   150   155   160
Asn Ser Ile Lys Ser Arg Leu Ser Lys Ser Gly His Ile Gln Thr Leu
                165   170   175
Leu Arg Ala Phe Glu Ala Arg Asp Arg Asn Ile Gln Glu Ser Asn Phe
                180   185   190
Asp Arg Val Asn Phe Trp Ser Met Val Asn Leu Val Val Met Val Val
            195   200   205
Val Ser Ala Ile Gln Val Tyr Met Leu Lys Ser Leu Phe Glu Asp Lys
    210   215   220
Arg Lys Ser Arg Thr
225

        <210> 70
        <211> 381
        <212> PRT
        <213> Homo sapiens

        <400> 70
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1   5   10   15
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Ser Asp Tyr Val Asn Tyr Asp Ile Ile Val Arg His Tyr Asn Tyr Thr
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Gly Lys Leu Asn Ile Ser Ala Asp Lys Glu Asn Ser Ile Lys Leu Thr
          35              40              45
Ser Val Val Phe Ile Leu Ile Cys Cys Phe Ile Ile Leu Glu Asn Ile
      50              55              60
Phe Val Leu Leu Thr Ile Trp Lys Thr Lys Lys Phe His Arg Pro Met
65              70              75              80
Tyr Tyr Phe Ile Gly Asn Leu Ala Leu Ser Asp Leu Leu Ala Gly Val
              85              90              95
Ala Tyr Thr Ala Asn Leu Leu Leu Ser Gly Ala Thr Thr Tyr Lys Leu
          100             105             110
Thr Pro Ala Gln Trp Phe Leu Arg Glu Gly Ser Met Phe Val Ala Leu
      115             120             125
Ser Ala Ser Val Phe Ser Leu Leu Ala Ile Ala Ile Glu Arg Tyr Ile
      130             135             140
Thr Met Leu Lys Met Lys Leu His Asn Gly Ser Asn Asn Phe Arg Leu
145             150             155             160
Phe Leu Leu Ile Ser Ala Cys Trp Val Ile Ser Leu Ile Leu Gly Gly
              165             170             175
Leu Pro Ile Met Gly Trp Asn Cys Ile Ser Ala Leu Ser Ser Cys Ser
          180             185             190
Thr Val Leu Pro Leu Tyr His Lys His Tyr Ile Leu Phe Cys Thr Thr
          195             200             205
Val Phe Thr Leu Leu Leu Leu Ser Ile Val Ile Leu Tyr Cys Arg Ile
      210             215             220
Tyr Ser Leu Val Arg Thr Arg Ser Arg Arg Leu Thr Phe Arg Lys Asn
225             230             235             240
Ile Ser Lys Ala Ser Arg Ser Ser Glu Asn Val Ala Leu Leu Lys Thr
              245             250             255
Val Ile Ile Val Leu Ser Val Phe Ile Ala Cys Trp Ala Pro Leu Phe
          260             265             270
Ile Leu Leu Leu Leu Asp Val Gly Cys Lys Val Lys Thr Cys Asp Ile
          275             280             285
Leu Phe Arg Ala Glu Tyr Phe Leu Val Leu Ala Val Leu Asn Ser Gly
      290             295             300
Thr Asn Pro Ile Ile Tyr Thr Leu Thr Asn Lys Glu Met Arg Arg Ala
305             310             315             320
Phe Ile Arg Ile Met Ser Cys Cys Lys Cys Pro Ser Gly Asp Ser Ala
              325             330             335
Gly Lys Phe Lys Arg Pro Ile Ile Ala Gly Met Glu Phe Ser Arg Ser
          340             345             350
Lys Ser Asp Asn Ser Ser His Pro Gln Lys Asp Glu Gly Asp Asn Pro
          355             360             365
Glu Thr Ile Met Ser Ser Gly Asn Val Asn Ser Ser Ser
370             375             380

<210> 71
<211> 679
<212> PRT
<213> Homo sapiens

<400> 71
Met Ala Thr Leu Ile Thr Ser Thr Thr Ala Ala Thr Ala Ala Ser Gly
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Pro Leu Val Asp Tyr Leu Trp Met Leu Ile Leu Gly Phe Ile Ile Ala
              20              25              30
Phe Val Leu Ala Phe Ser Val Gly Ala Asn Asp Val Ala Asn Ser Phe
          35              40              45
Gly Thr Ala Val Gly Ser Gly Val Val Thr Leu Lys Gln Ala Cys Ile
      50              55              60

66

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Leu Ala Ser Ile Phe Glu Thr Val Gly Ser Val Leu Leu Gly Ala Lys
65                  70              75                  80
Val Ser Glu Thr Ile Arg Lys Gly Leu Ile Asp Val Glu Met Tyr Asn
                85              90                  95
Ser Thr Gln Gly Leu Leu Met Ala Gly Ser Val Ser Ala Met Phe Gly
            100             105             110
Ser Ala Val Trp Gln Leu Val Ala Ser Phe Leu Lys Leu Pro Ile Ser
            115             120             125
Gly Thr His Cys Ile Val Gly Ala Thr Ile Gly Phe Ser Leu Val Ala
        130             135             140
Lys Gly Gln Glu Gly Val Lys Trp Ser Glu Leu Ile Lys Ile Val Met
145             150             155                 160
Ser Trp Phe Val Ser Pro Leu Leu Ser Gly Ile Met Ser Gly Ile Leu
            165             170             175
Phe Phe Leu Val Arg Ala Phe Ile Leu His Lys Ala Asp Pro Val Pro
        180             185             190
Asn Gly Leu Arg Ala Leu Pro Val Phe Tyr Ala Cys Thr Val Gly Ile
        195             200             205
Asn Leu Phe Ser Ile Met Tyr Thr Gly Ala Pro Leu Leu Gly Phe Asp
    210             215             220
Lys Leu Pro Leu Trp Gly Thr Ile Leu Ile Ser Val Gly Cys Ala Val
225             230             235                 240
Phe Cys Ala Leu Ile Val Trp Phe Phe Val Cys Pro Arg Met Lys Arg
            245             250             255
Lys Ile Glu Arg Glu Ile Lys Cys Ser Pro Ser Glu Ser Pro Leu Met
        260             265             270
Glu Lys Lys Asn Ser Leu Lys Glu Asp His Glu Glu Thr Lys Leu Ser
    275             280             285
Val Gly Asp Ile Glu Asn Lys His Pro Val Ser Glu Val Gly Pro Ala
    290             295             300
Thr Val Pro Leu Gln Ala Val Val Glu Glu Arg Thr Val Ser Phe Lys
305             310             315                 320
Leu Gly Asp Leu Glu Glu Ala Pro Glu Arg Glu Arg Leu Pro Ser Val
            325             330             335
Asp Leu Lys Glu Glu Thr Ser Ile Asp Ser Thr Val Asn Gly Ala Val
        340             345             350
Gln Leu Pro Asn Gly Asn Leu Val Gln Phe Ser Gln Ala Val Ser Asn
    355             360             365
Gln Ile Asn Ser Ser Gly His Ser Gln Tyr His Thr Val His Lys Asp
    370             375             380
Ser Gly Leu Tyr Lys Glu Leu Leu His Lys Leu His Leu Ala Lys Val
385             390             395                 400
Gly Asp Cys Met Gly Asp Ser Gly Asp Lys Pro Leu Arg Arg Asn Asn
            405             410             415
Ser Tyr Thr Ser Tyr Thr Met Ala Ile Cys Gly Met Pro Leu Asp Ser
            420             425             430
Phe Arg Ala Lys Glu Gly Glu Gln Lys Gly Glu Glu Met Glu Lys Leu
        435             440             445
Thr Trp Pro Asn Ala Asp Ser Lys Lys Arg Ile Arg Met Asp Ser Tyr
    450             455             460
Thr Ser Tyr Cys Asn Ala Val Ser Asp Leu His Ser Ala Ser Glu Ile
465             470             475                 480
Asp Met Ser Val Lys Ala Ala Met Gly Leu Gly Asp Arg Lys Gly Ser
            485             490             495
Asn Gly Ser Leu Glu Glu Trp Tyr Asp Gln Asp Lys Pro Glu Val Ser
            500             505             510
Leu Leu Phe Gln Phe Leu Gln Ile Leu Thr Ala Cys Phe Gly Ser Phe
        515             520             525
Ala His Gly Gly Asn Asp Val Ser Asn Ala Ile Gly Pro Leu Val Ala
    530             535             540
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67

Leu Tyr Leu Val Tyr Asp Thr Gly Asp Val Ser Ser Lys Val Ala Thr
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Pro Ile Trp Leu Leu Leu Tyr Gly Gly Val Gly Ile Cys Val Gly Leu
                565   570   575
Trp Val Trp Gly Arg Arg Val Ile Gln Thr Met Gly Lys Asp Leu Thr
                580   585   590
Pro Ile Thr Pro Ser Ser Gly Phe Ser Ile Glu Leu Ala Ser Ala Leu
            595   600   605
Thr Val Val Ile Ala Ser Asn Ile Gly Leu Pro Ile Ser Thr Thr His
        610   615   620
Cys Lys Val Gly Ser Val Val Ser Val Gly Trp Leu Arg Ser Lys Lys
625   630   635   640
Ala Val Asp Trp Arg Leu Phe Arg Asn Ile Phe Met Ala Trp Phe Val
                645   650   655
Thr Val Pro Ile Ser Gly Val Ile Ser Ala Ala Ile Met Ala Ile Phe
            660   665   670
Arg Tyr Val Ile Leu Arg Met
            675

        <210> 72
        <211> 476
        <212> PRT
        <213> Homo sapiens

        <400> 72
Met Met His Leu Ala Phe Leu Val Leu Leu Cys Leu Pro Val Cys Ser
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Ala Tyr Pro Leu Ser Gly Ala Ala Lys Glu Glu Asp Ser Asn Lys Asp
                20   25   30
Leu Ala Gln Gln Tyr Leu Glu Lys Tyr Tyr Asn Leu Glu Lys Asp Val
        35   40   45
Lys Gln Phe Arg Arg Lys Asp Ser Asn Leu Ile Val Lys Lys Ile Gln
    50   55   60
Gly Met Gln Lys Phe Leu Gly Leu Glu Val Thr Gly Lys Leu Asp Thr
65   70   75   80
Asp Thr Leu Glu Val Met Arg Lys Pro Arg Cys Gly Val Pro Asp Val
                85   90   95
Gly His Phe Ser Ser Phe Pro Gly Met Pro Lys Trp Arg Lys Thr His
                100   105   110
Leu Thr Tyr Arg Ile Val Asn Tyr Thr Pro Asp Leu Pro Arg Asp Ala
            115   120   125
Val Asp Ser Ala Ile Glu Lys Ala Leu Lys Val Trp Glu Glu Val Thr
        130   135   140
Pro Leu Thr Phe Ser Arg Leu Tyr Glu Gly Glu Ala Asp Ile Met Ile
145   150   155   160
Ser Phe Ala Val Lys Glu His Gly Asp Phe Tyr Ser Phe Asp Gly Pro
                165   170   175
Gly His Ser Leu Ala His Ala Tyr Pro Pro Gly Pro Gly Leu Tyr Gly
                180   185   190
Asp Ile His Phe Asp Asp Asp Glu Lys Trp Thr Glu Asp Ala Ser Gly
            195   200   205
Thr Asn Leu Phe Leu Val Ala Ala His Glu Leu Gly His Ser Leu Gly
        210   215   220
Leu Phe His Ser Ala Asn Thr Glu Ala Leu Met Tyr Pro Leu Tyr Asn
225   230   235   240
Ser Phe Thr Glu Leu Ala Gln Phe Arg Leu Ser Gln Asp Asp Val Asn
                245   250   255
Gly Ile Gln Ser Leu Tyr Gly Pro Pro Pro Ala Ser Thr Glu Glu Pro
                260   265   270
Leu Val Pro Thr Lys Ser Val Pro Ser Gly Ser Glu Met Pro Ala Lys
            275   280   285

                                68

```
Cys Asp Pro Ala Leu Ser Phe Asp Ala Ile Ser Thr Leu Arg Gly Glu
    290                 295                 300
Tyr Leu Phe Phe Lys Asp Arg Tyr Phe Trp Arg Arg Ser His Trp Asn
305                 310                 315                 320
Pro Glu Pro Glu Phe His Leu Ile Ser Ala Phe Trp Pro Ser Leu Pro
                325                 330                 335
Ser Tyr Leu Asp Ala Ala Tyr Glu Val Asn Ser Arg Asp Thr Val Phe
                340                 345                 350
Ile Phe Lys Gly Asn Glu Phe Trp Ala Ile Arg Gly Asn Glu Val Gln
            355                 360                 365
Ala Gly Tyr Pro Arg Gly Ile His Thr Leu Gly Phe Pro Pro Thr Ile
    370                 375                 380
Arg Lys Ile Asp Ala Ala Val Ser Asp Lys Glu Lys Lys Lys Thr Tyr
385                 390                 395                 400
Phe Phe Ala Ala Asp Lys Tyr Trp Arg Phe Asp Glu Asn Ser Gln Ser
                405                 410                 415
Met Glu Gln Gly Phe Pro Arg Leu Ile Ala Asp Asp Phe Pro Gly Val
            420                 425                 430
Glu Pro Lys Val Asp Ala Val Leu Gln Ala Phe Gly Phe Phe Tyr Phe
            435                 440                 445
Phe Ser Gly Ser Ser Gln Phe Glu Phe Asp Pro Asn Ala Arg Met Val
    450                 455                 460
Thr His Ile Leu Lys Ser Asn Ser Trp Leu His Cys
465                 470                 475

        <210> 73
        <211> 528
        <212> PRT
        <213> Homo sapiens

        <400> 73
Met Arg Cys Ala Leu Ala Leu Ser Ala Leu Leu Leu Leu Leu Ser Thr
1                   5                   10                  15
Pro Pro Leu Leu Pro Ser Ser Pro Ser Pro Ser Pro Ser Pro Ser Pro
            20                  25                  30
Ser Gln Asn Ala Thr Gln Thr Thr Asp Ser Ser Asn Lys Thr Ala
        35                  40                  45
Pro Thr Pro Ala Ser Ser Val Thr Ile Met Ala Thr Asp Thr Ala Gln
    50                  55                  60
Gln Ser Thr Val Pro Thr Ser Lys Ala Asn Glu Ile Leu Ala Ser Val
65                  70                  75                  80
Lys Ala Thr Thr Leu Gly Val Ser Ser Asp Ser Pro Gly Thr Thr Thr
                85                  90                  95
Leu Ala Gln Gln Val Ser Gly Pro Val Asn Thr Thr Val Ala Arg Gly
            100                 105                 110
Gly Gly Ser Gly Asn Pro Thr Thr Thr Ile Glu Ser Pro Lys Ser Thr
        115                 120                 125
Lys Ser Ala Asp Thr Thr Thr Val Ala Thr Ser Thr Ala Thr Ala Lys
    130                 135                 140
Pro Asn Thr Thr Ser Ser Gln Asn Gly Ala Glu Asp Thr Thr Asn Ser
145                 150                 155                 160
Gly Gly Lys Ser Ser His Ser Val Thr Thr Asp Leu Thr Ser Thr Lys
                165                 170                 175
Ala Glu His Leu Thr Thr Pro His Pro Thr Ser Pro Leu Ser Pro Arg
            180                 185                 190
Gln Pro Thr Leu Thr His Pro Val Ala Thr Pro Thr Ser Ser Gly His
            195                 200                 205
Asp His Leu Met Lys Ile Ser Ser Ser Ser Ser Thr Val Ala Ile Pro
    210                 215                 220
Gly Tyr Thr Phe Thr Ser Pro Gly Met Thr Thr Thr Leu Pro Ser Ser
225                 230                 235                 240
```

69

Val Ile Ser Gln Arg Thr Gln Gln Thr Ser Ser Gln Met Pro Ala Ser
                245   250   255
Ser Thr Ala Pro Ser Ser Gln Glu Thr Val Gln Pro Thr Ser Pro Ala
            260   265   270
Thr Ala Leu Arg Thr Pro Thr Leu Pro Glu Thr Met Ser Ser Ser Pro
            275   280   285
Thr Ala Ala Ser Thr Thr His Arg Tyr Pro Lys Thr Pro Ser Pro Thr
            290   295   300
Val Ala His Glu Ser Asn Trp Ala Lys Cys Glu Asp Leu Glu Thr Gln
305   310   315   320
Thr Gln Ser Glu Lys Gln Leu Val Leu Asn Leu Thr Gly Asn Thr Leu
                325   330   335
Cys Ala Gly Gly Ala Ser Asp Glu Lys Leu Ile Ser Leu Ile Cys Arg
                340   345   350
Ala Val Lys Ala Thr Phe Asn Pro Ala Gln Asp Lys Cys Gly Ile Arg
            355   360   365
Leu Ala Ser Val Pro Gly Ser Gln Thr Val Val Val Lys Glu Ile Thr
    370   375   380
Ile His Thr Lys Leu Pro Ala Lys Asp Val Tyr Glu Arg Leu Lys Asp
385   390   395   400
Lys Trp Asp Glu Leu Lys Glu Ala Gly Val Ser Asp Met Lys Leu Gly
            405   410   415
Asp Gln Gly Pro Pro Glu Glu Ala Glu Asp Arg Phe Ser Met Pro Leu
            420   425   430
Ile Ile Thr Ile Val Cys Met Ala Ser Phe Leu Leu Leu Val Ala Ala
            435   440   445
Leu Tyr Gly Cys Cys His Gln Arg Leu Ser Gln Arg Lys Asp Gln Gln
    450   455   460
Arg Leu Thr Glu Glu Leu Gln Thr Val Glu Asn Gly Tyr His Asp Asn
465   470   475   480
Pro Thr Leu Glu Val Met Glu Thr Ser Ser Glu Met Gln Glu Lys Lys
            485   490   495
Val Val Ser Leu Asn Gly Glu Leu Gly Asp Ser Trp Ile Val Pro Leu
            500   505   510
Asp Asn Leu Thr Lys Asp Asp Leu Asp Glu Glu Glu Asp Thr His Leu
    515   520   525

        <210> 74
        <211> 493
        <212> PRT
        <213> Homo sapiens

        <400> 74
Met Leu Lys Ala Leu Phe Leu Thr Met Leu Thr Leu Ala Leu Val Lys
1   5   10   15
Ser Gln Asp Thr Glu Glu Thr Ile Thr Tyr Thr Gln Cys Thr Asp Gly
            20   25   30
Tyr Glu Trp Asp Pro Val Arg Gln Gln Cys Lys Asp Ile Asp Glu Cys
        35   40   45
Asp Ile Val Pro Asp Ala Cys Lys Gly Gly Met Lys Cys Val Asn His
    50   55   60
Tyr Gly Gly Tyr Leu Cys Leu Pro Lys Thr Ala Gln Ile Ile Val Asn
65   70   75   80
Asn Glu Gln Pro Gln Gln Glu Thr Gln Pro Ala Glu Gly Thr Ser Gly
            85   90   95
Ala Thr Thr Gly Val Val Ala Ala Ser Ser Met Ala Thr Ser Gly Val
            100   105   110
Leu Pro Gly Gly Gly Phe Val Ala Ser Ala Ala Ala Val Ala Gly Pro
    115   120   125
Glu Met Gln Thr Gly Arg Asn Asn Phe Val Ile Arg Arg Asn Pro Ala
    130   135   140

70

Asp Pro Gln Arg Ile Pro Ser Asn Pro Ser His Arg Ile Gln Cys Ala
145   150   155   160
Ala Gly Tyr Glu Gln Ser Glu His Asn Val Cys Gln Asp Ile Asp Glu
                165   170   175
Cys Thr Ala Gly Thr His Asn Cys Arg Ala Asp Gln Val Cys Ile Asn
                180   185   190
Leu Arg Gly Ser Phe Ala Cys Gln Cys Pro Pro Gly Tyr Gln Lys Arg
            195   200   205
Gly Glu Gln Cys Val Asp Ile Asp Glu Cys Thr Ile Pro Pro Tyr Cys
    210   215   220
His Gln Arg Cys Val Asn Thr Pro Gly Ser Phe Tyr Cys Gln Cys Ser
225   230   235   240
Pro Gly Phe Gln Leu Ala Ala Asn Asn Tyr Thr Cys Val Asp Ile Asn
                245   250   255
Glu Cys Asp Ala Ser Asn Gln Cys Ala Gln Gln Cys Tyr Asn Ile Leu
            260   265   270
Gly Ser Phe Ile Cys Gln Cys Asn Gln Gly Tyr Glu Leu Ser Ser Asp
            275   280   285
Arg Leu Asn Cys Glu Asp Ile Asp Glu Cys Arg Thr Ser Ser Tyr Leu
    290   295   300
Cys Gln Tyr Gln Cys Val Asn Glu Pro Gly Lys Phe Ser Cys Met Cys
305   310   315   320
Pro Gln Gly Tyr Gln Val Val Arg Ser Arg Thr Cys Gln Asp Ile Asn
                325   330   335
Glu Cys Glu Thr Thr Asn Glu Cys Arg Glu Asp Glu Met Cys Trp Asn
            340   345   350
Tyr His Gly Gly Phe Arg Cys Tyr Pro Arg Asn Pro Cys Gln Asp Pro
            355   360   365
Tyr Ile Leu Thr Pro Glu Asn Arg Cys Val Cys Pro Val Ser Asn Ala
    370   375   380
Met Cys Arg Glu Leu Pro Gln Ser Ile Val Tyr Lys Tyr Met Ser Ile
385   390   395   400
Arg Ser Asp Arg Ser Val Pro Ser Asp Ile Phe Gln Ile Gln Ala Thr
                405   410   415
Thr Ile Tyr Ala Asn Thr Ile Asn Thr Phe Arg Ile Lys Ser Gly Asn
            420   425   430
Glu Asn Gly Glu Phe Tyr Leu Arg Gln Thr Ser Pro Val Ser Ala Met
            435   440   445
Leu Val Leu Val Lys Ser Leu Ser Gly Pro Arg Glu His Ile Val Asp
    450   455   460
Leu Glu Met Leu Thr Val Ser Ser Ile Gly Thr Phe Arg Thr Ser Ser
465   470   475   480
Val Leu Arg Leu Thr Ile Ile Val Gly Pro Phe Ser Phe
                485   490

        <210> 75
        <211> 646
        <212> PRT
        <213> Homo sapiens

        <400> 75
Met Gly Leu Pro Arg Leu Val Cys Ala Phe Leu Leu Ala Ala Cys Cys
1   5   10   15
Cys Cys Pro Arg Val Ala Gly Val Pro Gly Glu Ala Glu Gln Pro Ala
            20   25   30
Pro Glu Leu Val Glu Val Glu Val Gly Ser Thr Ala Leu Leu Lys Cys
        35   40   45
Gly Leu Ser Gln Ser Gln Gly Asn Leu Ser His Val Asp Trp Phe Ser
    50   55   60
Val His Lys Glu Lys Arg Thr Leu Ile Phe Arg Val Arg Gln Gly Gln
65   70   75   80

71

```
Gly Gln Ser Glu Pro Gly Glu Tyr Glu Gln Arg Leu Ser Leu Gln Asp
            85                  90                  95
Arg Gly Ala Thr Leu Ala Leu Thr Gln Val Thr Pro Gln Asp Glu Arg
            100             105             110
Ile Phe Leu Cys Gln Gly Lys Arg Pro Arg Ser Gln Glu Tyr Arg Ile
            115             120             125
Gln Leu Arg Val Tyr Lys Ala Pro Glu Glu Pro Asn Ile Gln Val Asn
    130             135             140
Pro Leu Gly Ile Pro Val Asn Ser Lys Glu Pro Glu Glu Val Ala Thr
145             150             155             160
Cys Val Gly Arg Asn Gly Tyr Pro Ile Pro Gln Val Ile Trp Tyr Lys
            165             170             175
Asn Gly Arg Pro Leu Lys Glu Glu Lys Asn Arg Val His Ile Gln Ser
            180             185             190
Ser Gln Thr Val Glu Ser Ser Gly Leu Tyr Thr Leu Gln Ser Ile Leu
            195             200             205
Lys Ala Gln Leu Val Lys Glu Asp Lys Asp Ala Gln Phe Tyr Cys Glu
    210             215             220
Leu Asn Tyr Arg Leu Pro Ser Gly Asn His Met Lys Glu Ser Arg Glu
225             230             235             240
Val Thr Val Pro Val Phe Tyr Pro Thr Glu Lys Val Trp Leu Glu Val
            245             250             255
Glu Pro Val Gly Met Leu Lys Glu Gly Asp Arg Val Glu Ile Arg Cys
            260             265             270
Leu Ala Asp Gly Asn Pro Pro Pro His Phe Ser Ile Ser Lys Gln Asn
    275             280             285
Pro Ser Thr Arg Glu Ala Glu Glu Glu Thr Thr Asn Asp Asn Gly Val
    290             295             300
Leu Val Leu Glu Pro Ala Arg Lys Glu His Ser Gly Arg Tyr Glu Cys
305             310             315             320
Gln Ala Trp Asn Leu Asp Thr Met Ile Ser Leu Leu Ser Glu Pro Gln
            325             330             335
Glu Leu Leu Val Asn Tyr Val Ser Asp Val Arg Val Ser Pro Ala Ala
            340             345             350
Pro Glu Arg Gln Glu Gly Ser Ser Leu Thr Leu Thr Cys Glu Ala Glu
            355             360             365
Ser Ser Gln Asp Leu Glu Phe Gln Trp Leu Arg Glu Glu Thr Asp Gln
    370             375             380
Val Leu Glu Arg Gly Pro Val Leu Gln Leu His Asp Leu Lys Arg Glu
385             390             395             400
Ala Gly Gly Gly Tyr Arg Cys Val Ala Ser Val Pro Ser Ile Pro Gly
            405             410             415
Leu Asn Arg Thr Gln Leu Val Lys Leu Ala Ile Phe Gly Pro Pro Trp
            420             425             430
Met Ala Phe Lys Glu Arg Lys Val Trp Val Lys Glu Asn Met Val Leu
            435             440             445
Asn Leu Ser Cys Glu Ala Ser Gly His Pro Arg Pro Thr Ile Ser Trp
    450             455             460
Asn Val Asn Gly Thr Ala Ser Glu Gln Asp Gln Asp Pro Gln Arg Val
465             470             475             480
Leu Ser Thr Leu Asn Val Leu Val Thr Pro Glu Leu Leu Glu Thr Gly
            485             490             495
Val Glu Cys Thr Ala Ser Asn Asp Leu Gly Lys Asn Thr Ser Ile Leu
            500             505             510
Phe Leu Glu Leu Val Asn Leu Thr Thr Leu Thr Pro Asp Ser Asn Thr
            515             520             525
Thr Thr Gly Leu Ser Thr Ser Thr Ala Ser Pro His Thr Arg Ala Asn
    530             535             540
Ser Thr Ser Thr Glu Arg Lys Leu Pro Glu Pro Glu Ser Arg Gly Val
545             550             555             560
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72

```
Val Ile Val Ala Val Ile Val Cys Ile Leu Val Leu Ala Val Leu Gly
                565                 570                 575
Ala Val Leu Tyr Phe Leu Tyr Lys Lys Gly Lys Leu Pro Cys Arg Arg
            580                 585                 590
Ser Gly Lys Gln Glu Ile Thr Leu Pro Pro Ser Arg Lys Thr Glu Leu
            595                 600                 605
Val Val Glu Val Lys Ser Asp Lys Leu Pro Glu Glu Met Gly Leu Leu
        610                 615                 620
Gln Gly Ser Ser Gly Asp Lys Arg Ala Pro Gly Asp Gln Gly Glu Lys
625                 630                 635                 640
Tyr Ile Asp Leu Arg His
                645


        <210> 76
        <211> 469
        <212> PRT
        <213> Homo sapiens


        <400> 76
Met His Ser Phe Pro Pro Leu Leu Leu Leu Phe Trp Gly Val Val
1               5                   10                  15
Ser His Ser Phe Pro Ala Thr Leu Glu Thr Gln Glu Gln Asp Val Asp
            20                  25                  30
Leu Val Gln Lys Tyr Leu Glu Lys Tyr Tyr Asn Leu Lys Asn Asp Gly
            35                  40                  45
Arg Gln Val Glu Lys Arg Arg Asn Ser Gly Pro Val Val Glu Lys Leu
        50                  55                  60
Lys Gln Met Gln Glu Phe Phe Gly Leu Lys Val Thr Gly Lys Pro Asp
65                  70                  75                  80
Ala Glu Thr Leu Lys Val Met Lys Gln Pro Arg Cys Gly Val Pro Asp
            85                  90                  95
Val Ala Gln Phe Val Leu Thr Glu Gly Asn Pro Arg Trp Glu Gln Thr
            100                 105                 110
His Leu Thr Tyr Arg Ile Glu Asn Tyr Thr Pro Asp Leu Pro Arg Ala
            115                 120                 125
Asp Val Asp His Ala Ile Glu Lys Ala Phe Gln Leu Trp Ser Asn Val
        130                 135                 140
Thr Pro Leu Thr Phe Thr Lys Val Ser Glu Gly Gln Ala Asp Ile Met
145                 150                 155                 160
Ile Ser Phe Val Arg Gly Asp His Arg Asp Asn Ser Pro Phe Asp Gly
            165                 170                 175
Pro Gly Gly Asn Leu Ala His Ala Phe Gln Pro Gly Pro Gly Ile Gly
            180                 185                 190
Gly Asp Ala His Phe Asp Glu Asp Glu Arg Trp Thr Asn Asn Phe Arg
        195                 200                 205
Glu Tyr Asn Leu His Arg Val Ala Ala His Glu Leu Gly His Ser Leu
210                 215                 220
Gly Leu Ser His Ser Thr Asp Ile Gly Ala Leu Met Tyr Pro Ser Tyr
225                 230                 235                 240
Thr Phe Ser Gly Asp Val Gln Leu Ala Gln Asp Asp Ile Asp Gly Ile
            245                 250                 255
Gln Ala Ile Tyr Gly Arg Ser Gln Asn Pro Val Gln Pro Ile Gly Pro
            260                 265                 270
Gln Thr Pro Lys Ala Cys Asp Ser Lys Leu Thr Phe Asp Ala Ile Thr
            275                 280                 285
Thr Ile Arg Gly Glu Val Met Phe Phe Lys Asp Arg Phe Tyr Met Arg
        290                 295                 300
Thr Asn Pro Phe Tyr Pro Glu Val Glu Leu Asn Phe Ile Ser Val Phe
305                 310                 315                 320
Trp Pro Gln Leu Pro Asn Gly Leu Glu Ala Ala Tyr Glu Phe Ala Asp
            325                 330                 335
```

73

Arg Asp Glu Val Arg Phe Phe Lys Gly Asn Lys Tyr Trp Ala Val Gln
            340   345   350
Gly Gln Asn Val Leu His Gly Tyr Pro Lys Asp Ile Tyr Ser Ser Phe
            355   360   365
Gly Phe Pro Arg Thr Val Lys His Ile Asp Ala Ala Leu Ser Glu Glu
        370   375   380
Asn Thr Gly Lys Thr Tyr Phe Phe Val Ala Asn Lys Tyr Trp Arg Tyr
385   390   395   400
Asp Glu Tyr Lys Arg Ser Met Asp Pro Gly Tyr Pro Lys Met Ile Ala
                405   410   415
His Asp Phe Pro Gly Ile Gly His Lys Val Asp Ala Val Phe Met Lys
            420   425   430
Asp Gly Phe Phe Tyr Phe Phe His Gly Thr Arg Gln Tyr Lys Phe Asp
        435   440   445
Pro Lys Thr Lys Arg Ile Leu Thr Leu Gln Lys Ala Asn Ser Trp Phe
450   455   460
Asn Cys Arg Lys Asn
465

        <210> 77
        <211> 384
        <212> PRT
        <213> Homo sapiens

        <400> 77
Met Asp Cys Ser Asn Gly Ser Ala Glu Cys Thr Gly Glu Gly Gly Ser
1   5   10   15
Lys Glu Val Val Gly Thr Phe Lys Ala Lys Asp Leu Ile Val Thr Pro
            20   25   30
Ala Thr Ile Leu Lys Glu Lys Pro Asp Pro Asn Asn Leu Val Phe Gly
        35   40   45
Thr Val Phe Thr Asp His Met Leu Thr Val Glu Trp Ser Ser Glu Phe
    50   55   60
Gly Trp Glu Lys Pro His Ile Lys Pro Leu Gln Asn Leu Ser Leu His
65   70   75   80
Pro Gly Ser Ser Ala Leu His Tyr Ala Val Glu Leu Phe Glu Gly Leu
                85   90   95
Lys Ala Phe Arg Gly Val Asp Asn Lys Ile Arg Leu Phe Gln Pro Asn
            100   105   110
Leu Asn Met Asp Arg Met Tyr Arg Ser Ala Val Arg Ala Thr Leu Pro
        115   120   125
Val Phe Asp Lys Glu Glu Leu Leu Glu Cys Ile Gln Gln Leu Val Lys
    130   135   140
Leu Asp Gln Glu Trp Val Pro Tyr Ser Thr Ser Ala Ser Leu Tyr Ile
145   150   155   160
Arg Pro Ala Phe Ile Gly Thr Glu Pro Ser Leu Gly Val Lys Lys Pro
                165   170   175
Thr Lys Ala Leu Leu Phe Val Leu Leu Ser Pro Val Gly Pro Tyr Phe
            180   185   190
Ser Ser Gly Thr Phe Asn Pro Val Ser Leu Trp Ala Asn Pro Lys Tyr
        195   200   205
Val Arg Ala Trp Lys Gly Gly Thr Gly Asp Cys Lys Met Gly Gly Asn
    210   215   220
Tyr Gly Ser Ser Leu Phe Ala Gln Cys Glu Asp Val Asp Asn Gly Cys
225   230   235   240
Gln Gln Val Leu Trp Leu Tyr Gly Arg Asp His Gln Ile Thr Glu Val
                245   250   255
Gly Thr Met Asn Leu Phe Leu Tyr Trp Ile Asn Glu Asp Gly Glu Glu
            260   265   270
Glu Leu Ala Thr Pro Pro Leu Asp Gly Ile Ile Leu Pro Gly Val Thr
        275   280   285

74

```
Arg Arg Cys Ile Leu Asp Leu Ala His Gln Trp Gly Glu Phe Lys Val
    290                 295                 300
Ser Glu Arg Tyr Leu Thr Met Asp Asp Leu Thr Thr Ala Leu Glu Gly
305                 310                 315                 320
Asn Arg Val Arg Glu Met Phe Ser Ser Gly Thr Ala Cys Val Val Cys
                325                 330                 335
Pro Val Ser Asp Ile Leu Tyr Lys Gly Glu Thr Ile His Ile Pro Thr
                340                 345                 350
Met Glu Asn Gly Pro Lys Leu Ala Ser Arg Ile Leu Ser Lys Leu Thr
                355                 360                 365
Asp Ile Gln Tyr Gly Arg Glu Glu Ser Asp Trp Thr Ile Val Leu Ser
    370                 375                 380
```

        <210> 78
        <211> 381
        <212> PRT
        <213> Homo sapiens

        <400> 78
```
Met His Leu Leu Ala Ile Leu Phe Cys Ala Leu Trp Ser Ala Val Leu
1               5                   10                  15
Ala Glu Asn Ser Asp Asp Tyr Asp Leu Met Tyr Val Asn Leu Asp Asn
                20                  25                  30
Glu Ile Asp Asn Gly Leu His Pro Thr Glu Asp Pro Thr Pro Cys Asp
        35                  40                  45
Cys Gly Gln Glu His Ser Glu Trp Asp Lys Leu Phe Ile Met Leu Glu
        50                  55                  60
Asn Ser Gln Met Arg Glu Arg Met Leu Leu Gln Ala Thr Asp Asp Val
65                  70                  75                  80
Leu Arg Gly Glu Leu Gln Arg Leu Arg Glu Glu Leu Gly Arg Leu Ala
                85                  90                  95
Glu Ser Leu Ala Arg Pro Cys Ala Pro Gly Ala Pro Ala Glu Ala Arg
            100                 105                 110
Leu Thr Ser Ala Leu Asp Glu Leu Leu Gln Ala Thr Arg Asp Ala Gly
            115                 120                 125
Arg Arg Leu Ala Arg Met Glu Gly Ala Glu Ala Gln Arg Pro Glu Glu
    130                 135                 140
Ala Gly Arg Ala Leu Ala Ala Val Leu Glu Glu Leu Arg Gln Thr Arg
145                 150                 155                 160
Ala Asp Leu His Ala Val Gln Gly Trp Ala Ala Arg Ser Trp Leu Pro
                165                 170                 175
Ala Gly Cys Glu Thr Ala Ile Leu Phe Pro Met Arg Ser Lys Lys Ile
                180                 185                 190
Phe Gly Ser Val His Pro Val Arg Pro Met Arg Leu Glu Ser Phe Ser
            195                 200                 205
Ala Cys Ile Trp Val Lys Ala Thr Asp Val Leu Asn Lys Thr Ile Leu
    210                 215                 220
Phe Ser Tyr Gly Thr Lys Arg Asn Pro Tyr Glu Ile Gln Leu Tyr Leu
225                 230                 235                 240
Ser Tyr Gln Ser Ile Val Phe Val Val Gly Gly Glu Glu Asn Lys Leu
                245                 250                 255
Val Ala Glu Ala Met Val Ser Leu Gly Arg Trp Thr His Leu Cys Gly
            260                 265                 270
Thr Trp Asn Ser Glu Glu Gly Leu Thr Ser Leu Trp Val Asn Gly Glu
            275                 280                 285
Leu Ala Ala Thr Thr Val Glu Met Ala Thr Gly His Ile Val Pro Glu
    290                 295                 300
Gly Gly Ile Leu Gln Ile Gly Gln Glu Lys Asn Gly Cys Cys Val Gly
305                 310                 315                 320
Gly Gly Phe Asp Glu Thr Leu Ala Phe Ser Gly Arg Leu Thr Gly Phe
                325                 330                 335
```

Asn Ile Trp Asp Ser Val Leu Ser Asn Glu Glu Ile Arg Glu Thr Gly
        340   345   350
Gly Ala Glu Ser Cys His Ile Arg Gly Asn Ile Val Gly Trp Gly Val
        355   360   365
Thr Glu Ile Gln Pro His Gly Gly Ala Gln Tyr Val Ser
    370   375   380

        <210> 79
        <211> 2813
        <212> PRT
        <213> Homo sapiens

        <400> 79
Met Ile Pro Ala Arg Phe Ala Gly Val Leu Leu Ala Leu Ala Leu Ile
  1   5   10   15
Leu Pro Gly Thr Leu Cys Ala Glu Gly Thr Arg Gly Arg Ser Ser Thr
            20   25   30
Ala Arg Cys Ser Leu Phe Gly Ser Asp Phe Val Asn Thr Phe Asp Gly
        35   40   45
Ser Met Tyr Ser Phe Ala Gly Tyr Cys Ser Tyr Leu Leu Ala Gly Gly
    50   55   60
Cys Gln Lys Arg Ser Phe Ser Ile Ile Gly Asp Phe Gln Asn Gly Lys
65   70   75   80
Arg Val Ser Leu Ser Val Tyr Leu Gly Glu Phe Phe Asp Ile His Leu
            85   90   95
Phe Val Asn Gly Thr Val Thr Gln Gly Asp Gln Arg Val Ser Met Pro
            100   105   110
Tyr Ala Ser Lys Gly Leu Tyr Leu Glu Thr Glu Ala Gly Tyr Tyr Lys
        115   120   125
Leu Ser Gly Glu Ala Tyr Gly Phe Val Ala Arg Ile Asp Gly Ser Gly
    130   135   140
Asn Phe Gln Val Leu Leu Ser Asp Arg Tyr Phe Asn Lys Thr Cys Gly
145   150   155   160
Leu Cys Gly Asn Phe Asn Ile Phe Ala Glu Asp Asp Phe Met Thr Gln
            165   170   175
Glu Gly Thr Leu Thr Ser Asp Pro Tyr Asp Phe Ala Asn Ser Trp Ala
            180   185   190
Leu Ser Ser Gly Glu Gln Trp Cys Glu Arg Ala Ser Pro Pro Ser Ser
    195   200   205
Ser Cys Asn Ile Ser Ser Gly Glu Met Gln Lys Gly Leu Trp Glu Gln
    210   215   220
Cys Gln Leu Leu Lys Ser Thr Ser Val Phe Ala Arg Cys His Pro Leu
225   230   235   240
Val Asp Pro Glu Pro Phe Val Ala Leu Cys Glu Lys Thr Leu Cys Glu
            245   250   255
Cys Ala Gly Gly Leu Glu Cys Ala Cys Pro Ala Leu Leu Glu Tyr Ala
            260   265   270
Arg Thr Cys Ala Gln Glu Gly Met Val Leu Tyr Gly Trp Thr Asp His
        275   280   285
Ser Ala Cys Ser Pro Val Cys Pro Ala Gly Met Glu Tyr Arg Gln Cys
    290   295   300
Val Ser Pro Cys Ala Arg Thr Cys Gln Ser Leu His Ile Asn Glu Met
305   310   315   320
Cys Gln Glu Arg Cys Val Asp Gly Cys Ser Cys Pro Glu Gly Gln Leu
            325   330   335
Leu Asp Glu Gly Leu Cys Val Glu Ser Thr Glu Cys Pro Cys Val His
            340   345   350
Ser Gly Lys Arg Tyr Pro Pro Gly Thr Ser Leu Ser Arg Asp Cys Asn
        355   360   365
Thr Cys Ile Cys Arg Asn Ser Gln Trp Ile Cys Ser Asn Glu Glu Cys
    370   375   380

                            76

Pro Gly Glu Cys Leu Val Thr Gly Gln Ser His Phe Lys Ser Phe Asp
385   390   395   400
Asn Arg Tyr Phe Thr Phe Ser Gly Ile Cys Gln Tyr Leu Leu Ala Arg
                405   410   415
Asp Cys Gln Asp His Ser Phe Ser Ile Val Ile Glu Thr Val Gln Cys
                420   425   430
Ala Asp Asp Arg Asp Ala Val Cys Thr Arg Ser Val Thr Val Arg Leu
            435   440   445
Pro Gly Leu His Asn Ser Leu Val Lys Leu Lys His Gly Ala Gly Val
    450   455   460
Ala Met Asp Gly Gln Asp Ile Gln Leu Pro Leu Leu Lys Gly Asp Leu
465   470   475   480
Arg Ile Gln His Thr Val Thr Ala Ser Val Arg Leu Ser Tyr Gly Glu
                485   490   495
Asp Leu Gln Met Asp Trp Asp Gly Arg Gly Arg Leu Leu Val Lys Leu
            500   505   510
Ser Pro Val Tyr Ala Gly Lys Thr Cys Gly Leu Cys Gly Asn Tyr Asn
    515   520   525
Gly Asn Gln Gly Asp Asp Phe Leu Thr Pro Ser Gly Leu Ala Glu Pro
    530   535   540
Arg Val Glu Asp Phe Gly Asn Ala Trp Lys Leu His Gly Asp Cys Gln
545   550   555   560
Asp Leu Gln Lys Gln His Ser Asp Pro Cys Ala Leu Asn Pro Arg Met
            565   570   575
Thr Arg Phe Ser Glu Glu Ala Cys Ala Val Leu Thr Ser Pro Thr Phe
            580   585   590
Glu Ala Cys His Arg Ala Val Ser Pro Leu Pro Tyr Leu Arg Asn Cys
    595   600   605
Arg Tyr Asp Val Cys Ser Cys Ser Asp Gly Arg Glu Cys Leu Cys Gly
    610   615   620
Ala Leu Ala Ser Tyr Ala Ala Ala Cys Ala Gly Arg Gly Val Arg Val
625   630   635   640
Ala Trp Arg Glu Pro Gly Arg Cys Glu Leu Asn Cys Pro Lys Gly Gln
            645   650   655
Val Tyr Leu Gln Cys Gly Thr Pro Cys Asn Leu Thr Cys Arg Ser Leu
            660   665   670
Ser Tyr Pro Asp Glu Glu Cys Asn Glu Ala Cys Leu Glu Gly Cys Phe
    675   680   685
Cys Pro Pro Gly Leu Tyr Met Asp Glu Arg Gly Asp Cys Val Pro Lys
    690   695   700
Ala Gln Cys Pro Cys Tyr Tyr Asp Gly Glu Ile Phe Gln Pro Glu Asp
705   710   715   720
Ile Phe Ser Asp His His Thr Met Cys Tyr Cys Glu Asp Gly Phe Met
            725   730   735
His Cys Thr Met Ser Gly Val Pro Gly Ser Leu Leu Pro Asp Ala Val
            740   745   750
Leu Ser Ser Pro Leu Ser His Arg Ser Lys Arg Ser Leu Ser Cys Arg
    755   760   765
Pro Pro Met Val Lys Leu Val Cys Pro Ala Asp Asn Leu Arg Ala Glu
    770   775   780
Gly Leu Glu Cys Thr Lys Thr Cys Gln Asn Tyr Asp Leu Glu Cys Met
785   790   795   800
Ser Met Gly Cys Val Ser Gly Cys Leu Cys Pro Pro Gly Met Val Arg
            805   810   815
His Glu Asn Arg Cys Val Ala Leu Glu Arg Cys Pro Cys Phe His Gln
            820   825   830
Gly Lys Glu Tyr Ala Pro Gly Glu Thr Val Lys Ile Gly Cys Asn Thr
    835   840   845
Cys Val Cys Arg Asp Arg Lys Trp Asn Cys Thr Asp His Val Cys Asp
    850   855   860

77

```
Ala Thr Cys Ser Thr Ile Gly Met Ala His Tyr Leu Thr Phe Asp Gly
865                 870                 875                     880
Leu Lys Tyr Leu Phe Pro Gly Glu Cys Gln Tyr Val Leu Val Gln Asp
                885                 890                 895
Tyr Cys Gly Ser Asn Pro Gly Thr Phe Arg Ile Leu Val Gly Asn Lys
            900                 905                 910
Gly Cys Ser His Pro Ser Val Lys Cys Lys Lys Arg Val Thr Ile Leu
        915                 920                 925
Val Glu Gly Gly Glu Ile Glu Leu Phe Asp Gly Glu Val Asn Val Lys
    930                 935                 940
Arg Pro Met Lys Asp Glu Thr His Phe Glu Val Val Glu Ser Gly Arg
945                 950                 955                     960
Tyr Ile Ile Leu Leu Leu Gly Lys Ala Leu Ser Val Val Trp Asp Arg
                965                 970                 975
His Leu Ser Ile Ser Val Val Leu Lys Gln Thr Tyr Gln Glu Lys Val
            980                 985                 990
Cys Gly Leu Cys Gly Asn Phe Asp Gly Ile Gln Asn Asn Asp Leu Thr
        995                 1000                1005
Ser Ser Asn Leu Gln Val Glu Glu Asp Pro Val Asp Phe Gly Asn Ser
    1010                1015                1020
Trp Lys Val Ser Ser Gln Cys Ala Asp Thr Arg Lys Val Pro Leu Asp
1025                1030                1035                    1040
Ser Ser Pro Ala Thr Cys His Asn Asn Ile Met Lys Gln Thr Met Val
            1045                1050                1055
Asp Ser Ser Cys Arg Ile Leu Thr Ser Asp Val Phe Gln Asp Cys Asn
            1060                1065                1070
Lys Leu Val Asp Pro Glu Pro Tyr Leu Asp Val Cys Ile Tyr Asp Thr
        1075                1080                1085
Cys Ser Cys Glu Ser Ile Gly Asp Cys Ala Cys Phe Cys Asp Thr Ile
        1090                1095                1100
Ala Ala Tyr Ala His Val Cys Ala Gln His Gly Lys Val Val Thr Trp
1105                1110                1115                    1120
Arg Thr Ala Thr Leu Cys Pro Gln Ser Cys Glu Glu Arg Asn Leu Arg
                1125                1130                1135
Glu Asn Gly Tyr Glu Cys Glu Trp Arg Tyr Asn Ser Cys Ala Pro Ala
            1140                1145                1150
Cys Gln Val Thr Cys Gln His Pro Glu Pro Leu Ala Cys Pro Val Gln
        1155                1160                1165
Cys Val Glu Gly Cys His Ala His Cys Pro Pro Gly Lys Ile Leu Asp
        1170                1175                1180
Glu Leu Leu Gln Thr Cys Val Asp Pro Glu Asp Cys Pro Val Cys Glu
1185                1190                1195                    1200
Val Ala Gly Arg Arg Phe Ala Ser Gly Lys Lys Val Thr Leu Asn Pro
                1205                1210                1215
Ser Asp Pro Glu His Cys Gln Ile Cys His Cys Asp Val Val Asn Leu
            1220                1225                1230
Thr Cys Glu Ala Cys Gln Glu Pro Gly Gly Leu Val Val Pro Pro Thr
            1235                1240                1245
Asp Ala Pro Val Ser Pro Thr Thr Leu Tyr Val Glu Asp Ile Ser Glu
    1250                1255                1260
Pro Pro Leu His Asp Phe Tyr Cys Ser Arg Leu Leu Asp Leu Val Phe
1265                1270                1275                    1280
Leu Leu Asp Gly Ser Ser Arg Leu Ser Glu Ala Glu Phe Glu Val Leu
                1285                1290                1295
Lys Ala Phe Val Val Asp Met Met Glu Arg Leu Arg Ile Ser Gln Lys
            1300                1305                1310
Trp Val Arg Val Ala Val Val Glu Tyr His Asp Gly Ser His Ala Tyr
            1315                1320                1325
Ile Gly Leu Lys Asp Arg Lys Arg Pro Ser Glu Leu Arg Arg Ile Ala
    1330                1335                1340
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78

```
Ser Gln Val Lys Tyr Ala Gly Ser Gln Val Ala Ser Thr Ser Glu Val
1345                1350            1355                    1360
Leu Lys Tyr Thr Leu Phe Gln Ile Phe Ser Lys Ile Asp Arg Pro Glu
                1365            1370            1375
Ala Ser Arg Ile Ala Leu Leu Leu Met Ala Ser Gln Glu Pro Gln Arg
                1380            1385            1390
Met Ser Arg Asn Phe Val Arg Tyr Val Gln Gly Leu Lys Lys Lys Lys
            1395            1400            1405
Val Ile Val Ile Pro Val Gly Ile Gly Pro His Ala Asn Leu Lys Gln
            1410            1415            1420
Ile Arg Leu Ile Glu Lys Gln Ala Pro Glu Asn Lys Ala Phe Val Leu
1425            1430            1435            1440
Ser Ser Val Asp Glu Leu Glu Gln Gln Arg Asp Glu Ile Val Ser Tyr
                1445            1450            1455
Leu Cys Asp Leu Ala Pro Glu Ala Pro Pro Pro Thr Leu Pro Pro His
                1460            1465            1470
Met Ala Gln Val Thr Val Gly Pro Gly Leu Leu Gly Val Ser Thr Leu
            1475            1480            1485
Gly Pro Lys Arg Asn Ser Met Val Leu Asp Val Ala Phe Val Leu Glu
            1490            1495            1500
Gly Ser Asp Lys Ile Gly Glu Ala Asp Phe Asn Arg Ser Lys Glu Phe
1505            1510            1515            1520
Met Glu Glu Val Ile Gln Arg Met Asp Val Gly Gln Asp Ser Ile His
                1525            1530            1535
Val Thr Val Leu Gln Tyr Ser Tyr Met Val Thr Val Glu Tyr Pro Phe
            1540            1545            1550
Ser Glu Ala Gln Ser Lys Gly Asp Ile Leu Gln Arg Val Arg Glu Ile
            1555            1560            1565
Arg Tyr Gln Gly Gly Asn Arg Thr Asn Thr Gly Leu Ala Leu Arg Tyr
            1570            1575            1580
Leu Ser Asp His Ser Phe Leu Val Ser Gln Gly Asp Arg Glu Gln Ala
1585            1590            1595            1600
Pro Asn Leu Val Tyr Met Val Thr Gly Asn Pro Ala Ser Asp Glu Ile
            1605            1610            1615
Lys Arg Leu Pro Gly Asp Ile Gln Val Val Pro Ile Gly Val Gly Pro
            1620            1625            1630
Asn Ala Asn Val Gln Glu Leu Glu Arg Ile Gly Trp Pro Asn Ala Pro
            1635            1640            1645
Ile Leu Ile Gln Asp Phe Glu Thr Leu Pro Arg Glu Ala Pro Asp Leu
            1650            1655            1660
Val Leu Gln Arg Cys Cys Ser Gly Glu Gly Leu Gln Ile Pro Thr Leu
1665            1670            1675            1680
Ser Pro Ala Pro Asp Cys Ser Gln Pro Leu Asp Val Ile Leu Leu Leu
            1685            1690            1695
Asp Gly Ser Ser Ser Phe Pro Ala Ser Tyr Phe Asp Glu Met Lys Ser
            1700            1705            1710
Phe Ala Lys Ala Phe Ile Ser Lys Ala Asn Ile Gly Pro Arg Leu Thr
            1715            1720            1725
Gln Val Ser Val Leu Gln Tyr Gly Ser Ile Thr Thr Ile Asp Val Pro
            1730            1735            1740
Trp Asn Val Val Pro Glu Lys Ala His Leu Leu Ser Leu Val Asp Val
1745            1750            1755            1760
Met Gln Arg Glu Gly Gly Pro Ser Gln Ile Gly Asp Ala Leu Gly Phe
            1765            1770            1775
Ala Val Arg Tyr Leu Thr Ser Glu Met His Gly Ala Arg Pro Gly Ala
            1780            1785            1790
Ser Lys Ala Val Val Ile Leu Val Thr Asp Val Ser Val Asp Ser Val
            1795            1800            1805
Asp Ala Ala Ala Asp Ala Ala Arg Ser Asn Arg Val Thr Val Phe Pro
            1810            1815            1820
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79

```
Ile Gly Ile Gly Asp Arg Tyr Asp Ala Ala Gln Leu Arg Ile Leu Ala
1825                1830                1835                1840
Gly Pro Ala Gly Asp Ser Asn Val Val Lys Leu Gln Arg Ile Glu Asp
              1845                1850                1855
Leu Pro Thr Met Val Thr Leu Gly Asn Ser Phe Leu His Lys Leu Cys
              1860                1865                1870
Ser Gly Phe Val Arg Ile Cys Met Asp Glu Asp Gly Asn Glu Lys Arg
              1875                1880                1885
Pro Gly Asp Val Trp Thr Leu Pro Asp Gln Cys His Thr Val Thr Cys
              1890                1895                1900
Gln Pro Asp Gly Gln Thr Leu Leu Lys Ser His Arg Val Asn Cys Asp
1905                1910                1915                1920
Arg Gly Leu Arg Pro Ser Cys Pro Asn Ser Gln Ser Pro Val Lys Val
              1925                1930                1935
Glu Glu Thr Cys Gly Cys Arg Trp Thr Cys Pro Cys Val Cys Thr Gly
              1940                1945                1950
Ser Ser Thr Arg His Ile Val Thr Phe Asp Gly Gln Asn Phe Lys Leu
              1955                1960                1965
Thr Gly Ser Cys Ser Tyr Val Leu Phe Gln Asn Lys Glu Gln Asp Leu
              1970                1975                1980
Glu Val Ile Leu His Asn Gly Ala Cys Ser Pro Gly Ala Arg Gln Gly
1985                1990                1995                2000
Cys Met Lys Ser Ile Glu Val Lys His Ser Ala Leu Ser Val Glu Leu
              2005                2010                2015
His Ser Asp Met Glu Val Thr Val Asn Gly Arg Leu Val Ser Val Pro
              2020                2025                2030
Tyr Val Gly Gly Asn Met Glu Val Asn Val Tyr Gly Ala Ile Met His
              2035                2040                2045
Glu Val Arg Phe Asn His Leu Gly His Ile Phe Thr Phe Thr Pro Gln
              2050                2055                2060
Asn Asn Glu Phe Gln Leu Gln Leu Ser Pro Lys Thr Phe Ala Ser Lys
2065                2070                2075                2080
Thr Tyr Gly Leu Cys Gly Ile Cys Asp Glu Asn Gly Ala Asn Asp Phe
              2085                2090                2095
Met Leu Arg Asp Gly Thr Val Thr Thr Asp Trp Lys Thr Leu Val Gln
              2100                2105                2110
Glu Trp Thr Val Gln Arg Pro Gly Gln Thr Cys Gln Pro Ile Leu Glu
              2115                2120                2125
Glu Gln Cys Leu Val Pro Asp Ser Ser His Cys Gln Val Leu Leu Leu
              2130                2135                2140
Pro Leu Phe Ala Glu Cys His Lys Val Leu Ala Pro Ala Thr Phe Tyr
2145                2150                2155                2160
Ala Ile Cys Gln Gln Asp Ser Cys His Gln Glu Gln Val Cys Glu Val
              2165                2170                2175
Ile Ala Ser Tyr Ala His Leu Cys Arg Thr Asn Gly Val Cys Val Asp
              2180                2185                2190
Trp Arg Thr Pro Asp Phe Cys Ala Met Ser Cys Pro Pro Ser Leu Val
              2195                2200                2205
Tyr Asn His Cys Glu His Gly Cys Pro Arg His Cys Asp Gly Asn Val
              2210                2215                2220
Ser Ser Cys Gly Asp His Pro Ser Glu Gly Cys Phe Cys Pro Pro Asp
2225                2230                2235                2240
Lys Val Met Leu Glu Gly Ser Cys Val Pro Glu Glu Ala Cys Thr Gln
              2245                2250                2255
Cys Ile Gly Glu Asp Gly Val Gln His Gln Phe Leu Glu Ala Trp Val
              2260                2265                2270
Pro Asp His Gln Pro Cys Gln Ile Cys Thr Cys Leu Ser Gly Arg Lys
              2275                2280                2285
Val Asn Cys Thr Thr Gln Pro Cys Pro Thr Ala Lys Ala Pro Thr Cys
              2290                2295                2300
```

80

```
Gly Leu Cys Glu Val Ala Arg Leu Arg Gln Asn Ala Asp Gln Cys Cys
2305                2310                2315                2320
Pro Glu Tyr Glu Cys Val Cys Asp Pro Val Ser Cys Asp Leu Pro Pro
                2325                2330                2335
Val Pro His Cys Glu Arg Gly Leu Gln Pro Thr Leu Thr Asn Pro Gly
            2340                2345                2350
Glu Cys Arg Pro Asn Phe Thr Cys Ala Cys Arg Lys Glu Glu Cys Lys
        2355                2360                2365
Arg Val Ser Pro Pro Ser Cys Pro Pro His Arg Leu Pro Thr Leu Arg
    2370                2375                2380
Lys Thr Gln Cys Cys Asp Glu Tyr Glu Cys Ala Cys Asn Cys Val Asn
2385                2390                2395                2400
Ser Thr Val Ser Cys Pro Leu Gly Tyr Leu Ala Ser Thr Ala Thr Asn
                2405                2410                2415
Asp Cys Gly Cys Thr Thr Thr Thr Cys Leu Pro Asp Lys Val Cys Val
                2420                2425                2430
His Arg Ser Thr Ile Tyr Pro Val Gly Gln Phe Trp Glu Glu Gly Cys
            2435                2440                2445
Asp Val Cys Thr Cys Thr Asp Met Glu Asp Ala Val Met Gly Leu Arg
    2450                2455                2460
Val Ala Gln Cys Ser Gln Lys Pro Cys Glu Asp Ser Cys Arg Ser Gly
2465                2470                2475                2480
Phe Thr Tyr Val Leu His Glu Gly Glu Cys Cys Gly Arg Cys Leu Pro
                2485                2490                2495
Ser Ala Cys Glu Val Val Thr Gly Ser Pro Arg Gly Asp Ser Gln Ser
            2500                2505                2510
Ser Trp Lys Ser Val Gly Ser Gln Trp Ala Ser Pro Glu Asn Pro Cys
            2515                2520                2525
Leu Ile Asn Glu Cys Val Arg Val Lys Glu Glu Val Phe Ile Gln Gln
    2530                2535                2540
Arg Asn Val Ser Cys Pro Gln Leu Glu Val Pro Val Cys Pro Ser Gly
2545                2550                2555                2560
Phe Gln Leu Ser Cys Lys Thr Ser Ala Cys Cys Pro Ser Cys Arg Cys
                2565                2570                2575
Glu Arg Met Glu Ala Cys Met Leu Asn Gly Thr Val Ile Gly Pro Gly
            2580                2585                2590
Lys Thr Val Met Ile Asp Val Cys Thr Thr Cys Arg Cys Met Val Gln
            2595                2600                2605
Val Gly Val Ile Ser Gly Phe Lys Leu Glu Cys Arg Lys Thr Thr Cys
    2610                2615                2620
Asn Pro Cys Pro Leu Gly Tyr Lys Glu Glu Asn Asn Thr Gly Glu Cys
2625                2630                2635                2640
Cys Gly Arg Cys Leu Pro Thr Ala Cys Thr Ile Gln Leu Arg Gly Gly
                2645                2650                2655
Gln Ile Met Thr Leu Lys Arg Asp Glu Thr Leu Gln Asp Gly Cys Asp
            2660                2665                2670
Thr His Phe Cys Lys Val Asn Glu Arg Gly Glu Tyr Phe Trp Glu Lys
            2675                2680                2685
Arg Val Thr Gly Cys Pro Pro Phe Asp Glu His Lys Cys Leu Ala Glu
    2690                2695                2700
Gly Gly Lys Ile Met Lys Ile Pro Gly Thr Cys Cys Asp Thr Cys Glu
2705                2710                2715                2720
Glu Pro Glu Cys Asn Asp Ile Thr Ala Arg Leu Gln Tyr Val Lys Val
                2725                2730                2735
Gly Ser Cys Lys Ser Glu Val Glu Val Asp Ile His Tyr Cys Gln Gly
            2740                2745                2750
Lys Cys Ala Ser Lys Ala Met Tyr Ser Ile Asp Ile Asn Asp Val Gln
            2755                2760                2765
Asp Gln Cys Ser Cys Cys Ser Pro Thr Arg Thr Glu Pro Met Gln Val
    2770                2775                2780
```

81

Ala Leu His Cys Thr Asn Gly Ser Val Val Tyr His Glu Val Leu Asn
2785   2790   2795   2800
Ala Met Glu Cys Lys Cys Ser Pro Arg Lys Cys Ser Lys
          2805   2810

<210> 80
<211> 1039
<212> PRT
<213> Homo sapiens

<400> 80
Met Ala Val Gln Leu Val Pro Asp Ser Ala Leu Gly Leu Leu Met Met
 1   5   10   Gly   15
Thr Glu Gly Arg Arg Cys Gln Val His Leu Leu Asp Asp Arg Lys Leu
          20   25   30
Glu Leu Leu Val Gln Pro Lys Leu Leu Ala Lys Glu Leu Leu Asp Leu
          35   40   45
Val Ala Ser His Phe Asn Leu Lys Glu Lys Glu Tyr Phe Gly Ile Ala
          50   55   60
Phe Thr Asp Glu Thr Gly His Leu Asn Trp Leu Gln Leu Asp Arg Arg
65   70   75   80
Val Leu Glu His Asp Phe Pro Lys Lys Ser Gly Pro Val Val Leu Tyr
          85   90   95
Phe Cys Val Arg Phe Tyr Ile Glu Ser Ile Ser Tyr Leu Lys Asp Asn
          100   105   110
Ala Thr Ile Glu Leu Phe Phe Leu Asn Ala Lys Ser Cys Ile Tyr Lys
          115   120   125
Glu Leu Ile Asp Val Asp Ser Glu Val Val Phe Glu Leu Ala Ser Tyr
          130   135   140
Ile Leu Gln Glu Ala Lys Gly Asp Phe Ser Ser Asn Glu Val Val Arg
145   150   155   160
Ser Asp Leu Lys Lys Leu Pro Ala Leu Pro Thr Gln Ala Leu Lys Glu
          165   170   175
His Pro Ser Leu Ala Tyr Cys Glu Asp Arg Val Ile Glu His Tyr Lys
          180   185   190
Lys Leu Asn Gly Gln Thr Arg Gly Gln Ala Ile Val Asn Tyr Met Ser
          195   200   205
Ile Val Glu Ser Leu Pro Thr Tyr Gly Val His Tyr Tyr Ala Val Lys
          210   215   220
Asp Lys Gln Gly Ile Pro Trp Trp Leu Gly Leu Ser Tyr Lys Gly Ile
225   230   235   240
Phe Gln Tyr Asp Tyr His Asp Lys Val Lys Pro Arg Lys Ile Phe Gln
          245   250   255
Trp Arg Gln Leu Glu Asn Leu Tyr Phe Arg Glu Lys Lys Phe Ser Val
          260   265   270
Glu Val His Asp Pro Arg Arg Ala Ser Val Thr Arg Arg Thr Phe Gly
          275   280   285
His Ser Gly Ile Ala Val His Thr Trp Tyr Ala Cys Pro Ala Leu Ile
          290   295   300
Lys Ser Ile Trp Ala Met Ala Ile Ser Gln His Gln Phe Tyr Leu Asp
305   310   315   320
Arg Lys Gln Ser Lys Ser Lys Ile His Ala Ala Arg Ser Leu Ser Glu
          325   330   335
Ile Ala Ile Asp Leu Thr Glu Thr Gly Thr Leu Lys Thr Ser Lys Leu
          340   345   350
Ala Asn Met Gly Ser Lys Gly Lys Ile Ile Ser Gly Ser Ser Gly Ser
          355   360   365
Leu Leu Ser Ser Gly Ser Gln Glu Ser Asp Ser Ser Gln Ser Ala Lys
          370   375   380
Lys Asp Met Leu Ala Ala Leu Lys Ser Arg Gln Glu Ala Leu Glu Glu
385   390   395   400

82

```
Thr Leu Arg Gln Arg Leu Glu Glu Leu Lys Lys Leu Cys Leu Arg Glu
                405                     410                415
Ala Glu Leu Thr Gly Lys Leu Pro Val Glu Tyr Pro Leu Asp Pro Gly
                420                     425                430
Glu Glu Pro Pro Ile Val Arg Arg Arg Ile Gly Thr Ala Phe Lys Leu
            435                     440                445
Asp Glu Gln Lys Ile Leu Pro Lys Gly Glu Glu Ala Glu Leu Glu Arg
        450                     455                460
Leu Glu Arg Glu Phe Ala Ile Gln Ser Gln Ile Thr Glu Ala Ala Arg
465                     470                475                480
Arg Leu Ala Ser Asp Pro Asn Val Ser Lys Lys Leu Lys Lys Gln Arg
                485                     490                495
Lys Thr Ser Tyr Leu Asn Ala Leu Lys Lys Leu Gln Glu Ile Glu Asn
                500                     505                510
Ala Ile Asn Glu Asn Arg Ile Lys Ser Gly Lys Lys Pro Thr Gln Arg
            515                     520                525
Ala Ser Leu Ile Ile Asp Asp Gly Asn Ile Ala Ser Glu Asp Ser Ser
            530                     535                540
Leu Ser Asp Ala Leu Val Leu Glu Asp Glu Asp Ser Gln Val Thr Ser
545                     550                555                560
Thr Ile Ser Pro Leu His Ser Pro His Lys Gly Leu Pro Pro Arg Pro
                565                     570                575
Pro Ser His Asn Arg Pro Pro Pro Gln Ser Leu Glu Gly Leu Arg
                580                     585                590
Gln Met His Tyr His Arg Asn Asp Tyr Asp Lys Ser Pro Ile Lys Pro
        595                     600                605
Lys Met Trp Ser Glu Ser Ser Leu Asp Glu Pro Tyr Glu Lys Val Lys
        610                     615                620
Lys Arg Ser Ser His Ser His Ser Ser Ser His Lys Arg Phe Pro Ser
625                     630                635                640
Thr Gly Ser Cys Ala Glu Ala Gly Gly Gly Ser Asn Ser Leu Gln Asn
                645                     650                655
Ser Pro Ile Arg Gly Leu Pro His Trp Asn Ser Gln Ser Ser Met Pro
                660                     665                670
Ser Thr Pro Asp Leu Arg Val Arg Ser Pro His Tyr Val His Ser Thr
        675                     680                685
Arg Ser Val Asp Ile Ser Pro Thr Arg Leu His Ser Leu Ala Leu His
        690                     695                700
Phe Arg His Arg Ser Ser Ser Leu Glu Ser Gln Gly Lys Leu Leu Gly
705                     710                715                720
Ser Glu Asn Asp Thr Gly Ser Pro Asp Phe Tyr Thr Pro Arg Thr Arg
                725                     730                735
Ser Ser Asn Gly Ser Asp Pro Met Asp Asp Cys Ser Ser Cys Thr Ser
                740                     745                750
His Ser Ser Ser Glu His Tyr Tyr Pro Ala Gln Met Asn Ala Asn Tyr
                755                     760                765
Ser Thr Leu Ala Glu Asp Ser Pro Ser Lys Ala Arg Gln Arg Gln Arg
        770                     775                780
Gln Arg Gln Arg Ala Ala Gly Ala Leu Gly Ser Ala Ser Ser Gly Ser
785                     790                     795                800
Met Pro Asn Leu Ala Ala Arg Gly Gly Ala Gly Gly Ala Gly Gly Ala
                805                     810                815
Gly Gly Gly Val Tyr Leu His Ser Gln Ser Gln Pro Ser Ser Gln Tyr
                820                     825                830
Arg Ile Lys Glu Tyr Pro Leu Tyr Ile Glu Gly Gly Ala Thr Pro Val
        835                     840                845
Val Val Arg Ser Leu Glu Ser Asp Gln Glu Cys His Tyr Ser Val Lys
        850                     855                860
Ala Gln Phe Lys Thr Ser Asn Ser Tyr Thr Ala Gly Gly Leu Phe Lys
865                     870                     875                880
```

83

Glu Ser Trp Arg Gly Gly Gly Gly Asp Glu Gly Asp Thr Gly Arg Leu
              885   890   895
Thr Pro Ser Arg Ser Gln Ile Leu Arg Thr Pro Ser Leu Gly Arg Glu
              900   905   910
Gly Ala His Asp Lys Gly Ala Gly Arg Ala Ala Val Ser Asp Glu Leu
              915   920   925
Arg Gln Trp Tyr Gln Arg Ser Thr Ala Ser His Lys Glu His Ser Arg
          930   935   940
Leu Ser His Thr Ser Ser Thr Ser Ser Asp Ser Gly Ser Gln Tyr Ser
945   950   955   960
Thr Ser Ser Gln Ser Thr Phe Val Ala His Ser Arg Val Thr Arg Met
              965   970   975
Pro Gln Met Cys Lys Ala Thr Ser Ala Ala Leu Pro Gln Ser Gln Arg
              980   985   990
Ser Ser Thr Pro Ser Ser Glu Ile Gly Ala Thr Pro Pro Ser Ser Pro
          995   1000   1005
His His Ile Leu Thr Trp Gln Thr Gly Glu Ala Thr Glu Asn Ser Pro
      1010   1015   1020
Ile Leu Asp Gly Ser Glu Ser Pro Pro His Gln Ser Thr Asp Glu
1025   1030   1035

        <210> 81
        <211> 748
        <212> PRT
        <213> Homo sapiens

        <400> 81
Met Ser Asn Pro Gly Gly Arg Arg Asn Gly Pro Val Lys Leu Arg Leu
  1   5   10   15
Thr Val Leu Cys Ala Lys Asn Leu Val Lys Lys Asp Phe Phe Arg Leu
          20   25   30
Pro Asp Pro Phe Ala Lys Val Val Val Asp Gly Ser Gly Gln Cys His
          35   40   45
Ser Thr Asp Thr Val Lys Asn Thr Leu Asp Pro Lys Trp Asn Gln His
          50   55   60
Tyr Asp Leu Tyr Ile Gly Lys Ser Asp Ser Val Thr Ile Ser Val Trp
65   70   75   80
Asn His Lys Lys Ile His Lys Lys Gln Gly Ala Gly Phe Leu Gly Cys
              85   90   95
Val Arg Leu Leu Ser Asn Ala Ile Asn Arg Leu Lys Asp Thr Gly Tyr
          100   105   110
Gln Arg Leu Asp Leu Cys Lys Leu Gly Pro Asn Asp Asn Asp Thr Val
          115   120   125
Arg Gly Gln Ile Val Val Ser Leu Gln Ser Arg Asp Arg Ile Gly Thr
          130   135   140
Gly Gly Gln Val Val Asp Cys Ser Arg Leu Phe Asp Asn Asp Leu Pro
145   150   155   160
Asp Gly Trp Glu Glu Arg Arg Thr Ala Ser Gly Arg Ile Gln Tyr Leu
              165   170   175
Asn His Ile Thr Arg Thr Thr Gln Trp Glu Arg Pro Thr Arg Pro Ala
          180   185   190
Ser Glu Tyr Ser Ser Pro Gly Arg Pro Leu Ser Cys Phe Val Asp Glu
          195   200   205
Asn Thr Pro Ile Ser Gly Thr Asn Gly Ala Thr Cys Gly Gln Ser Ser
          210   215   220
Asp Pro Arg Leu Ala Glu Arg Arg Val Arg Ser Gln Arg His Arg Asn
225   230   235   240
Tyr Met Ser Arg Thr His Leu His Thr Pro Pro Asp Leu Pro Glu Gly
              245   250   255
Tyr Glu Gln Arg Thr Thr Gln Gln Gly Gln Val Tyr Phe Leu His Thr
          260   265   270

84

```
Gln Thr Gly Val Ser Thr Trp His Asp Pro Arg Val Pro Arg Asp Leu
        275                 280                 285
Ser Asn Ile Asn Cys Glu Glu Leu Gly Pro Leu Pro Pro Gly Trp Glu
        290                 295                 300
Ile Arg Asn Thr Ala Thr Gly Arg Val Tyr Phe Val Asp His Asn Asn
305                     310                 315                 320
Arg Thr Thr Gln Phe Thr Asp Pro Arg Leu Ser Ala Asn Leu His Leu
                325                 330                 335
Val Leu Asn Arg Gln Asn Gln Leu Lys Asp Gln Gln Gln Gln Gln Val
            340                 345                 350
Val Ser Leu Cys Pro Asp Asp Thr Glu Cys Leu Thr Val Pro Arg Tyr
            355                 360                 365
Lys Arg Asp Leu Val Gln Lys Leu Lys Ile Leu Arg Gln Glu Leu Ser
    370                 375                 380
Gln Gln Gln Pro Gln Ala Gly His Cys Arg Ile Glu Val Ser Arg Glu
385                 390                 395                 400
Glu Ile Phe Glu Glu Ser Tyr Arg Gln Val Met Lys Met Arg Pro Lys
                405                 410                 415
Asp Leu Trp Lys Arg Leu Met Ile Lys Phe Arg Gly Glu Glu Gly Leu
            420                 425                 430
Asp Tyr Gly Gly Val Ala Arg Glu Trp Leu Tyr Leu Leu Ser His Glu
            435                 440                 445
Met Leu Asn Pro Tyr Tyr Gly Leu Phe Gln Tyr Ser Arg Asp Asp Ile
    450                 455                 460
Tyr Thr Leu Gln Ile Asn Pro Asp Ser Ala Val Asn Pro Glu His Leu
465                     470                 475                 480
Ser Tyr Phe His Phe Val Gly Arg Ile Met Gly Met Ala Val Phe His
                485                 490                 495
Gly His Tyr Ile Asp Gly Gly Phe Thr Leu Pro Phe Tyr Lys Gln Leu
            500                 505                 510
Leu Gly Lys Ser Ile Thr Leu Asp Asp Met Glu Leu Val Asp Pro Asp
    515                 520                 525
Leu His Asn Ser Leu Val Trp Ile Leu Glu Asn Asp Ile Thr Gly Val
    530                 535                 540
Leu Asp His Thr Phe Cys Val Glu His Asn Ala Tyr Gly Glu Ile Ile
545                 550                 555                 560
Gln His Glu Leu Lys Pro Asn Gly Lys Ser Ile Pro Val Asn Glu Glu
                565                 570                 575
Asn Lys Lys Glu Tyr Val Arg Leu Tyr Val Asn Trp Arg Phe Leu Arg
            580                 585                 590
Gly Ile Glu Ala Gln Phe Leu Ala Leu Gln Lys Gly Phe Asn Glu Val
    595                 600                 605
Ile Pro Gln His Leu Leu Lys Thr Phe Asp Glu Lys Glu Leu Glu Leu
    610                 615                 620
Ile Ile Cys Gly Leu Gly Lys Ile Asp Val Asn Asp Trp Lys Val Asn
625                 630                 635                 640
Thr Arg Leu Lys His Cys Thr Pro Asp Ser Asn Ile Val Lys Trp Phe
                645                 650                 655
Trp Lys Ala Val Glu Phe Phe Asp Glu Glu Arg Arg Ala Arg Leu Leu
            660                 665                 670
Gln Phe Val Thr Gly Ser Ser Arg Val Pro Leu Gln Gly Phe Lys Ala
            675                 680                 685
Leu Gln Gly Ala Ala Gly Pro Arg Leu Phe Thr Ile His Gln Ile Asp
    690                 695                 700
Ala Cys Thr Asn Asn Leu Pro Lys Ala His Thr Cys Phe Asn Arg Ile
705                 710                 715                 720
Asp Ile Pro Pro Tyr Glu Ser Tyr Glu Lys Leu Tyr Glu Lys Leu Leu
                725                 730                 735
Thr Ala Ile Glu Glu Thr Cys Gly Phe Ala Val Glu
                740                 745
```

<210> 82
<211> 199
<212> PRT
<213> Homo sapiens

<400> 82
Pro Leu Trp Thr Glu Pro Pro Leu Ser Cys Cys Leu Pro Ala Thr Tyr
1   5   10   15
Pro Ala Asp Arg Gly Pro Ala Glu Pro Cys Ser Cys Ala Gly Val Ile
            20   25   30
Leu Gly Phe Leu Leu Phe Arg Gly His Asn Ser Gln Pro Thr Met Thr
        35   40   45
Gln Thr Ser Ser Ser Gln Gly Gly Leu Gly Gly Leu Ser Leu Thr Thr
    50   55   60
Glu Pro Val Ser Ser Asn Pro Gly Tyr Ile Pro Ser Ser Glu Ala Asn
65   70   75   80
Arg Pro Ser His Leu Ser Ser Thr Gly Thr Pro Gly Ala Gly Val Pro
            85   90   95
Ser Ser Gly Arg Asp Gly Gly Thr Ser Arg Asp Thr Phe Gln Thr Val
            100   105   110
Pro Pro Asn Ser Thr Thr Met Ser Leu Ser Met Arg Glu Asp Ala Thr
            115   120   125
Ile Leu Pro Ser Pro Thr Ser Glu Thr Val Leu Thr Val Ala Ala Phe
    130   135   140
Gly Val Ile Ser Phe Ile Val Ile Leu Val Val Val Val Ile Ile Leu
145   150   155   160
Val Gly Val Val Ser Leu Arg Phe Lys Cys Arg Lys Ser Lys Glu Ser
                165   170   175
Gly Asp Pro Gln Lys Pro Gly Glu Arg Glu Glu Lys Val Gly His Arg
            180   185   190
Arg Glu Pro Tyr Pro Trp Asn
        195

<210> 83
<211> 652
<212> PRT
<213> Homo sapiens

<400> 83
Met Ala Thr Ser Met Gly Leu Leu Leu Leu Leu Leu Leu Leu Leu Thr
1   5   10   15
Gln Pro Gly Ala Gly Thr Gly Ala Asp Thr Glu Ala Val Val Cys Val
            20   25   30
Gly Thr Ala Cys Tyr Thr Ala His Ser Gly Lys Leu Ser Ala Ala Glu
        35   40   45
Ala Gln Asn His Cys Asn Gln Asn Gly Gly Asn Leu Ala Thr Val Lys
    50   55   60
Ser Lys Glu Glu Ala Gln His Val Gln Arg Val Leu Ala Gln Leu Leu
65   70   75   80
Arg Arg Glu Ala Ala Leu Thr Ala Arg Met Ser Lys Phe Trp Ile Gly
            85   90   95
Leu Gln Arg Glu Lys Gly Lys Cys Leu Asp Pro Ser Leu Pro Leu Lys
            100   105   110
Gly Phe Ser Trp Val Gly Gly Gly Glu Asp Thr Pro Tyr Ser Asn Trp
        115   120   125
His Lys Glu Leu Arg Asn Ser Cys Ile Ser Lys Arg Cys Val Ser Leu
    130   135   140
Leu Leu Asp Leu Ser Gln Pro Leu Leu Pro Asn Arg Leu Pro Lys Trp
145   150   155   160
Ser Glu Gly Pro Cys Gly Ser Pro Gly Ser Pro Gly Ser Asn Ile Glu
                165   170   175

```
Gly Phe Val Cys Lys Phe Ser Phe Lys Gly Met Cys Arg Pro Leu Ala
            180                     185                 190
Leu Gly Gly Pro Gly Gln Val Thr Tyr Thr Thr Pro Phe Gln Thr Thr
        195                 200                 205
Ser Ser Ser Leu Glu Ala Val Pro Phe Ala Ser Ala Ala Asn Val Ala
        210                 215                 220
Cys Gly Glu Gly Asp Lys Asp Glu Thr Gln Ser His Tyr Phe Leu Cys
225                 230                 235                 240
Lys Glu Lys Ala Pro Asp Val Phe Asp Trp Gly Ser Ser Gly Pro Leu
                245                 250                 255
Cys Val Ser Pro Lys Tyr Gly Cys Asn Phe Asn Asn Gly Gly Cys His
                260                 265                 270
Gln Asp Cys Phe Glu Gly Gly Asp Gly Ser Phe Leu Cys Gly Cys Arg
        275                 280                 285
Pro Gly Phe Arg Leu Leu Asp Asp Leu Val Thr Cys Ala Ser Arg Asn
    290                 295                 300
Pro Cys Ser Ser Ser Pro Cys Arg Gly Gly Ala Thr Cys Val Leu Gly
305                 310                 315                 320
Pro His Gly Lys Asn Tyr Thr Cys Arg Cys Pro Gln Gly Tyr Gln Leu
                325                 330                 335
Asp Ser Ser Gln Leu Asp Cys Val Asp Val Asp Glu Cys Gln Asp Ser
            340                 345                 350
Pro Cys Ala Gln Glu Cys Val Asn Thr Pro Gly Gly Phe Arg Cys Glu
        355                 360                 365
Cys Trp Val Gly Tyr Glu Pro Gly Gly Pro Gly Glu Gly Ala Cys Gln
    370                 375                 380
Asp Val Asp Glu Cys Ala Leu Gly Arg Ser Pro Cys Ala Gln Gly Cys
385                 390                 395                 400
Thr Asn Thr Asp Gly Ser Phe His Cys Ser Cys Glu Glu Gly Tyr Val
                405                 410                 415
Leu Ala Gly Glu Asp Gly Thr Gln Cys Gln Asp Val Asp Glu Cys Val
        420                 425                 430
Gly Pro Gly Gly Pro Leu Cys Asp Ser Leu Cys Phe Asn Thr Gln Gly
        435                 440                 445
Ser Phe His Cys Gly Cys Leu Pro Gly Trp Val Leu Ala Pro Asn Gly
    450                 455                 460
Val Ser Cys Thr Met Gly Pro Val Ser Leu Gly Pro Pro Ser Gly Pro
465                 470                 475                 480
Pro Asp Glu Glu Asp Lys Gly Glu Lys Glu Gly Ser Thr Val Pro Arg
                485                 490                 495
Ala Ala Thr Ala Ser Pro Thr Arg Gly Pro Glu Gly Thr Pro Lys Ala
            500                 505                 510
Thr Pro Thr Thr Ser Arg Pro Ser Leu Ser Ser Asp Ala Pro Ile Thr
        515                 520                 525
Ser Ala Pro Leu Lys Met Leu Ala Pro Ser Gly Ser Ser Gly Val Trp
        530                 535                 540
Arg Glu Pro Ser Ile His His Ala Thr Ala Ala Ser Gly Pro Gln Glu
545                 550                 555                 560
Pro Ala Gly Gly Asp Ser Ser Val Ala Thr Gln Asn Asn Asp Gly Thr
                565                 570                 575
Asp Gly Gln Lys Leu Leu Leu Phe Tyr Ile Leu Gly Thr Val Val Ala
            580                 585                 590
Ile Leu Leu Leu Leu Ala Leu Ala Leu Gly Leu Leu Val Tyr Arg Lys
        595                 600                 605
Arg Arg Ala Lys Arg Glu Glu Lys Lys Glu Lys Lys Pro Gln Asn Ala
    610                 615                 620
Ala Asp Ser Tyr Ser Trp Val Pro Glu Arg Ala Glu Ser Arg Ala Met
625                 630                 635                 640
Glu Asn Gln Tyr Ser Pro Thr Pro Gly Thr Asp Cys
                645                 650
```

87

<210> 84
<211> 1338
<212> PRT
<213> Homo sapiens

<400> 84
Met Val Ser Tyr Trp Asp Thr Gly Val Leu Leu Cys Ala Leu Leu Ser
1   5   10   15
Cys Leu Leu Leu Thr Gly Ser Ser Ser Gly Ser Lys Leu Lys Asp Pro
            20   25   30
Glu Leu Ser Leu Lys Gly Thr Gln His Ile Met Gln Ala Gly Gln Thr
            35   40   45
Leu His Leu Gln Cys Arg Gly Glu Ala Ala His Lys Trp Ser Leu Pro
        50   55   60
Glu Met Val Ser Lys Glu Ser Glu Arg Leu Ser Ile Thr Lys Ser Ala
65   70   75   80
Cys Gly Arg Asn Gly Lys Gln Phe Cys Ser Thr Leu Thr Leu Asn Thr
                85   90   95
Ala Gln Ala Asn His Thr Gly Phe Tyr Ser Cys Lys Tyr Leu Ala Val
                100   105   110
Pro Thr Ser Lys Lys Lys Glu Thr Glu Ser Ala Ile Tyr Ile Phe Ile
            115   120   125
Ser Asp Thr Gly Arg Pro Phe Val Glu Met Tyr Ser Glu Ile Pro Glu
        130   135   140
Ile Ile His Met Thr Glu Gly Arg Glu Leu Val Ile Pro Cys Arg Val
145   150   155   160
Thr Ser Pro Asn Ile Thr Val Thr Leu Lys Lys Phe Pro Leu Asp Thr
                165   170   175
Leu Ile Pro Asp Gly Lys Arg Ile Ile Trp Asp Ser Arg Lys Gly Phe
            180   185   190
Ile Ile Ser Asn Ala Thr Tyr Lys Glu Ile Gly Leu Leu Thr Cys Glu
            195   200   205
Ala Thr Val Asn Gly His Leu Tyr Lys Thr Asn Tyr Leu Thr His Arg
        210   215   220
Gln Thr Asn Thr Ile Ile Asp Val Gln Ile Ser Thr Pro Arg Pro Val
225   230   235   240
Lys Leu Leu Arg Gly His Thr Leu Val Leu Asn Cys Thr Ala Thr Thr
                245   250   255
Pro Leu Asn Thr Arg Val Gln Met Thr Trp Ser Tyr Pro Asp Glu Lys
            260   265   270
Asn Lys Arg Ala Ser Val Arg Arg Ile Asp Gln Ser Asn Ser His
            275   280   285
Ala Asn Ile Phe Tyr Ser Val Leu Thr Ile Asp Lys Met Gln Asn Lys
        290   295   300
Asp Lys Gly Leu Tyr Thr Cys Arg Val Arg Ser Gly Pro Ser Phe Lys
305   310   315   320
Ser Val Asn Thr Ser Val His Ile Tyr Asp Lys Ala Phe Ile Thr Val
                325   330   335
Lys His Arg Lys Gln Gln Val Leu Glu Thr Val Ala Gly Lys Arg Ser
            340   345   350
Tyr Arg Leu Ser Met Lys Val Lys Ala Phe Pro Ser Pro Glu Val Val
            355   360   365
Trp Leu Lys Asp Gly Leu Pro Ala Thr Glu Lys Ser Ala Arg Tyr Leu
            370   375   380
Thr Arg Gly Tyr Ser Leu Ile Ile Lys Asp Val Thr Glu Glu Asp Ala
385   390   395   400
Gly Asn Tyr Thr Ile Leu Leu Ser Ile Lys Gln Ser Asn Val Phe Lys
                405   410   415
Asn Leu Thr Ala Thr Leu Ile Val Asn Val Lys Pro Gln Ile Tyr Glu
                420   425   430

88

```
Lys Ala Val Ser Ser Phe Pro Asp Pro Ala Leu Tyr Pro Leu Gly Ser
        435             440             445
Arg Gln Ile Leu Thr Cys Thr Ala Tyr Gly Ile Pro Gln Pro Thr Ile
    450             455             460
Lys Trp Phe Trp His Pro Cys Asn His Asn His Ser Glu Ala Arg Cys
465             470             475             480
Asp Phe Cys Ser Asn Asn Glu Glu Ser Phe Ile Leu Asp Ala Asp Ser
            485             490             495
Asn Met Gly Asn Arg Ile Glu Ser Ile Thr Gln Arg Met Ala Ile Ile
        500             505             510
Glu Gly Lys Asn Lys Met Ala Ser Thr Leu Val Val Ala Asp Ser Arg
        515             520             525
Ile Ser Gly Ile Tyr Ile Cys Ile Ala Ser Asn Lys Val Gly Thr Val
    530             535             540
Gly Arg Asn Ile Ser Phe Tyr Ile Thr Asp Val Pro Asn Gly Phe His
545             550             555             560
Val Asn Leu Glu Lys Met Pro Thr Glu Gly Glu Asp Leu Lys Leu Ser
            565             570             575
Cys Thr Val Asn Lys Phe Leu Tyr Arg Asp Val Thr Trp Ile Leu Leu
            580             585             590
Arg Thr Val Asn Asn Arg Thr Met His Tyr Ser Ile Ser Lys Gln Lys
        595             600             605
Met Ala Ile Thr Lys Glu His Ser Ile Thr Leu Asn Leu Thr Ile Met
    610             615             620
Asn Val Ser Leu Gln Asp Ser Gly Thr Tyr Ala Cys Arg Ala Arg Asn
625             630             635             640
Val Tyr Thr Gly Glu Glu Ile Leu Gln Lys Lys Glu Ile Thr Ile Arg
            645             650             655
Asp Gln Glu Ala Pro Tyr Leu Leu Arg Asn Leu Ser Asp His Thr Val
        660             665             670
Ala Ile Ser Ser Ser Thr Thr Leu Asp Cys His Ala Asn Gly Val Pro
    675             680             685
Glu Pro Gln Ile Thr Trp Phe Lys Asn Asn His Lys Ile Gln Gln Glu
    690             695             700
Pro Gly Ile Ile Leu Gly Pro Gly Ser Ser Thr Leu Phe Ile Glu Arg
705             710             715             720
Val Thr Glu Glu Asp Glu Gly Val Tyr His Cys Lys Ala Thr Asn Gln
            725             730             735
Lys Gly Ser Val Glu Ser Ser Ala Tyr Leu Thr Val Gln Gly Thr Ser
            740             745             750
Asp Lys Ser Asn Leu Glu Leu Ile Thr Leu Thr Cys Thr Cys Val Ala
    755             760             765
Ala Thr Leu Phe Trp Leu Leu Leu Thr Leu Leu Ile Arg Lys Met Lys
    770             775             780
Arg Ser Ser Ser Glu Ile Lys Thr Asp Tyr Leu Ser Ile Ile Met Asp
785             790             795             800
Pro Asp Glu Val Pro Leu Asp Glu Gln Cys Glu Arg Leu Pro Tyr Asp
            805             810             815
Ala Ser Lys Trp Glu Phe Ala Arg Glu Arg Leu Lys Leu Gly Lys Ser
            820             825             830
Leu Gly Arg Gly Ala Phe Gly Lys Val Val Gln Ala Ser Ala Phe Gly
        835             840             845
Ile Lys Lys Ser Pro Thr Cys Arg Thr Val Ala Val Lys Met Leu Lys
    850             855             860
Glu Gly Ala Thr Ala Ser Glu Tyr Lys Ala Leu Met Thr Glu Leu Lys
865             870             875             880
Ile Leu Thr His Ile Gly His His Leu Asn Val Val Asn Leu Leu Gly
            885             890             895
Ala Cys Thr Lys Gln Gly Gly Pro Leu Met Val Ile Val Glu Tyr Cys
        900             905             910
```

89

Lys Tyr Gly Asn Leu Ser Asn Tyr Leu Lys Ser Lys Arg Asp Leu Phe
        915   920   925
Phe Leu Asn Lys Asp Ala Ala Leu His Met Glu Pro Lys Lys Glu Lys
    930   935   940
Met Glu Pro Gly Leu Glu Gln Gly Lys Lys Pro Arg Leu Asp Ser Val
945   950   955   960
Thr Ser Ser Glu Ser Phe Ala Ser Ser Gly Phe Gln Glu Asp Lys Ser
                965   970   975
Leu Ser Asp Val Glu Glu Glu Glu Asp Ser Asp Gly Phe Tyr Lys Glu
                980   985   990
Pro Ile Thr Met Glu Asp Leu Ile Ser Tyr Ser Phe Gln Val Ala Arg
            995   1000   1005
Gly Met Glu Phe Leu Ser Ser Arg Lys Cys Ile His Arg Asp Leu Ala
    1010   1015   1020
Ala Arg Asn Ile Leu Leu Ser Glu Asn Asn Val Val Lys Ile Cys Asp
1025   1030   1035   1040
Phe Gly Leu Ala Arg Asp Ile Tyr Lys Asn Pro Asp Tyr Val Arg Lys
                1045   1050   1055
Gly Asp Thr Arg Leu Pro Leu Lys Trp Met Ala Pro Glu Ser Ile Phe
            1060   1065   1070
Asp Lys Ile Tyr Ser Thr Lys Ser Asp Val Trp Ser Tyr Gly Val Leu
            1075   1080   1085
Leu Trp Glu Ile Phe Ser Leu Gly Gly Ser Pro Tyr Pro Gly Val Gln
            1090   1095   1100
Met Asp Glu Asp Phe Cys Ser Arg Leu Arg Glu Gly Met Arg Met Arg
1105   1110   1115   1120
Ala Pro Glu Tyr Ser Thr Pro Glu Ile Tyr Gln Ile Met Leu Asp Cys
            1125   1130   1135
Trp His Arg Asp Pro Lys Glu Arg Pro Arg Phe Ala Glu Leu Val Glu
            1140   1145   1150
Lys Leu Gly Asp Leu Leu Gln Ala Asn Val Gln Gln Asp Gly Lys Asp
    1155   1160   1165
Tyr Ile Pro Ile Asn Ala Ile Leu Thr Gly Asn Ser Gly Phe Thr Tyr
    1170   1175   1180
Ser Thr Pro Ala Phe Ser Glu Asp Phe Phe Lys Glu Ser Ile Ser Ala
1185   1190   1195   1200
Pro Lys Phe Asn Ser Gly Ser Ser Asp Asp Val Arg Tyr Val Asn Ala
            1205   1210   1215
Phe Lys Phe Met Ser Leu Glu Arg Ile Lys Thr Phe Glu Glu Leu Leu
            1220   1225   1230
Pro Asn Ala Thr Ser Met Phe Asp Asp Tyr Gln Gly Asp Ser Ser Thr
    1235   1240   1245
Leu Leu Ala Ser Pro Met Leu Lys Arg Phe Thr Trp Thr Asp Ser Lys
    1250   1255   1260
Pro Lys Ala Ser Leu Lys Ile Asp Leu Arg Val Thr Ser Lys Ser Lys
1265   1270   1275   1280
Glu Ser Gly Leu Ser Asp Val Ser Arg Pro Ser Phe Cys His Ser Ser
            1285   1290   1295
Cys Gly His Val Ser Glu Gly Lys Arg Arg Phe Thr Tyr Asp His Ala
            1300   1305   1310
Glu Leu Glu Arg Lys Ile Ala Cys Cys Ser Pro Pro Pro Asp Tyr Asn
    1315   1320   1325
Ser Val Val Leu Tyr Ser Thr Pro Pro Ile
    1330   1335

        <210> 85
        <211> 289
        <212> PRT
        <213> Homo sapiens

90

<400> 85

```
Met Glu Asn Gly Tyr Thr Tyr Glu Asp Tyr Lys Asn Thr Ala Glu Trp
 1               5                  10                  15
Leu Leu Ser His Thr Lys His Arg Pro Gln Val Ala Ile Ile Cys Gly
            20                  25                  30
Ser Gly Leu Gly Gly Leu Thr Asp Lys Leu Thr Gln Ala Gln Ile Phe
        35                  40                  45
Asp Tyr Ser Glu Ile Pro Asn Phe Pro Arg Ser Thr Val Pro Gly His
    50                  55                  60
Ala Gly Arg Leu Val Phe Gly Phe Leu Asn Gly Arg Ala Cys Val Met
65                  70                  75                  80
Met Gln Gly Arg Phe His Met Tyr Glu Gly Tyr Pro Leu Trp Lys Val
                85                  90                  95
Thr Phe Pro Val Arg Val Phe His Leu Leu Gly Val Asp Thr Leu Val
            100                 105                 110
Val Thr Asn Ala Ala Gly Gly Leu Asn Pro Lys Phe Glu Val Gly Asp
            115                 120                 125
Ile Met Leu Ile Arg Asp His Ile Asn Leu Pro Gly Phe Ser Gly Gln
    130                 135                 140
Asn Pro Leu Arg Gly Pro Asn Asp Glu Arg Phe Gly Asp Arg Phe Pro
145                 150                 155                 160
Ala Met Ser Asp Ala Tyr Asp Arg Thr Met Arg Gln Arg Ala Leu Ser
            165                 170                 175
Thr Trp Lys Gln Met Gly Glu Gln Arg Glu Leu Gln Glu Gly Thr Tyr
        180                 185                 190
Val Met Val Ala Gly Pro Ser Phe Glu Thr Val Ala Glu Cys Arg Val
    195                 200                 205
Leu Gln Lys Leu Gly Ala Asp Ala Val Gly Met Ser Thr Val Pro Glu
    210                 215                 220
Val Ile Val Ala Arg His Cys Gly Leu Arg Val Phe Gly Phe Ser Leu
225                 230                 235                 240
Ile Thr Asn Lys Val Ile Met Asp Tyr Glu Ser Leu Glu Lys Ala Asn
            245                 250                 255
His Glu Glu Val Leu Ala Ala Gly Lys Gln Ala Ala Gln Lys Leu Glu
            260                 265                 270
Gln Phe Val Ser Ile Leu Met Ala Ser Ile Pro Leu Pro Asp Lys Ala
        275                 280                 285
Ser
```

<210> 86
<211> 509
<212> PRT
<213> Homo sapiens

<400> 86

```
Met Pro Pro Glu Gln His His Gln Pro Asn Lys Val Ser Pro Lys Leu
 1               5                  10                  15
Cys Ser Ala Gln Pro Ala Pro Arg Gly Arg Arg Arg Pro Gly Gly Arg
            20                  25                  30
Gly Pro Ala Ala Gly Gly Arg Thr Phe Ala Asn Ala Arg Phe Val Leu
        35                  40                  45
Gly Glu Gly Val Ala Ile Glu Arg Gly Ala Asp Asp Thr Thr Gln Pro
    50                  55                  60
Pro Val Ala Gly Ser Val Asn Pro Glu Gly Ala Ala Ala Ala Leu Val
65                  70                  75                  80
Pro Leu Ala Gly Ala Arg Val Ala Ala Ala Ala Asp Ala Leu His Asp
                85                  90                  95
Ala Pro Arg Ala Val Pro Gly Leu Leu Ala Leu Gly Leu Val Thr Gly
            100                 105                 110
```

91

```
Gln Ala Asp Gln Arg Pro Gly Ala Gly Ala Arg Gln Gln Gln Gln Gln
        115                 120                 125
Pro Gln Gln Arg Asp Gln Glu Val Pro Ala Ala Gly Gln Pro Pro Val
    130                 135                 140
Pro Arg His Gln Val His Pro Pro Ala Pro Pro Pro Pro Pro Pro Arg
145                 150                 155                 160
Ser Arg Ala Gly Ser Gly Ala Gly Ala Leu Pro Cys Ala Gly His Thr
                165                 170                 175
Arg Arg Arg Arg Arg Thr Ser Ser Pro Arg Ser Ser Pro Pro Leu Ser
            180                 185                 190
Gly Pro Pro Gly Arg Ala Ser Pro Arg Gly Ala Arg Pro Pro Pro Leu
        195                 200                 205
Leu Arg Ala Ala Pro Thr Pro Ser Pro Arg Ala Leu Ala Pro Ala Ala
    210                 215                 220
Ala Ser Pro Pro Pro Pro Pro Pro Pro Gly Arg Glu Gly Glu Lys
225                 230                 235                 240
Arg Lys Lys Phe Pro Pro Gly Ser Ser Gly Ser Thr Gln Thr Ser Gly
            245                 250                 255
Ala Ala Ala Ala Val Ala Ala Ala Leu Gly Ser Ser Pro Gly Arg Arg
        260                 265                 270
Arg Leu Leu Pro Leu Leu Leu Arg Val Gly Arg Pro Arg Ser Gly Ala
        275                 280                 285
Ala Ser Gly Pro Val Pro Ala Ser Arg Ala Ala Glu Trp Ala Arg Trp
    290                 295                 300
Arg Ser Thr Arg Ser Ala Ala Ser Ala Pro Arg Ala Pro Leu Ala Ser
305                 310                 315                 320
Leu Leu Arg Arg Ser Ser Gly Arg Leu Phe Met Ala Gly Ala Ser Ala
            325                 330                 335
Ala Arg Ala Ala Pro Ser Pro Ile Leu Pro Pro Pro Pro Asp Leu Pro
        340                 345                 350
Pro Thr Pro Thr Arg Arg Ala Pro Leu Ile Gly Cys Pro Pro Ser Pro
        355                 360                 365
Ala Arg Pro Ala Pro Ser Ala Ser Pro Ser Pro Ser Arg Ala Ala Gly
    370                 375                 380
Pro Phe Leu Pro Pro Ser His Ala Ser Thr Ser Ser Arg Ser Pro Pro
385                 390                 395                 400
Pro Arg Ala Arg Arg Thr Glu Pro Ala Val Pro Pro Ser Cys Gly Ser
            405                 410                 415
Gly Pro Gly Ala Ala Gly Ala Leu Arg Met Gly Leu Gly Arg Thr Gln
        420                 425                 430
Arg Ala Ala Arg Val Ala Val Ser Arg Ala Leu Ala Gly Thr Val Ala
        435                 440                 445
Ala Ala Ala Gly Leu Gly Ala Arg Arg Ala Arg Arg Leu His Leu Arg
    450                 455                 460
Gly Gln Ile Gly Val Arg Arg Val Ala Gly Thr Pro Glu Ala Arg Gly
465                 470                 475                 480
Arg Gly Asp Gly Cys Ser Leu Gly Arg Val Ser Pro Asp Arg Thr Pro
                485                 490                 495
Gly Lys Gly Ser Lys Gly Met Glu Pro Pro His Thr Gly
                500                 505

        <210> 87
        <211> 4
        <212> PRT
        <213> Artificial Sequence

        <220>
        <223> nuclear target motif
```

```
        <400> 87
Arg Arg Arg Pro
 1


        <210> 88
        <211> 4
        <212> PRT
        <213> Artificial Sequence


        <220>
        <223> nuclear target motif


        <400> 88
Arg Arg Arg Arg
 1


        <210> 89
        <211> 4
        <212> PRT
        <213> Artificial Sequence


        <220>
        <223> nuclear target motif


        <400> 89
Lys Arg Lys Lys
 1


        <210> 90
        <211> 7
        <212> PRT
        <213> Artificial Sequence


        <220>
        <223> nuclear target motif


        <400> 90
Pro Pro Arg Ala Arg Arg Thr
 1               5


        <210> 91
        <211> 7
        <212> PRT
        <213> Artificial Sequence


        <220>
        <223> nuclear target motif


        <400> 91
Pro Arg Ala Arg Arg Thr Glu
 1               5


        <210> 92
        <211> 712
        <212> PRT
        <213> Homo sapiens


        <220>
        <221> MOD_RES
        <222> (510)...(510)
        <223> Xaa = Phe, Leu, Ile or Val
```

<400> 92

```
Met Lys Thr Ala Ala Leu Thr Pro Pro Arg Ser Pro Pro Pro Pro Pro
1               5                   10              15
Leu Arg Pro Pro Pro Met Lys Arg Leu Pro Leu Leu Val Val Phe Ser
            20                  25              30
Thr Leu Leu Asn Cys Ser Tyr Thr Gln Asn Cys Thr Lys Thr Pro Cys
        35                  40                  45
Leu Pro Asn Ala Lys Cys Glu Ile Arg Asn Gly Ile Glu Ala Cys Tyr
    50                  55                  60
Cys Asn Met Gly Phe Ser Gly Asn Gly Val Thr Ile Cys Glu Asp Asp
65                  70                  75                  80
Asn Glu Cys Gly Asn Leu Thr Gln Ser Cys Gly Glu Asn Ala Asn Cys
            85                  90                  95
Thr Asn Thr Glu Gly Ser Tyr Tyr Cys Met Cys Val Pro Gly Phe Arg
        100                 105                 110
Ser Ser Ser Asn Gln Asp Arg Phe Ile Thr Asn Asp Gly Thr Val Cys
        115                 120                 125
Ile Glu Asn Val Asn Ala Asn Cys His Leu Asp Asn Val Cys Ile Ala
    130                 135                 140
Ala Asn Ile Asn Lys Thr Leu Thr Lys Ile Arg Ser Ile Lys Glu Pro
145                 150                 155                 160
Val Ala Leu Leu Gln Glu Val Tyr Arg Asn Ser Val Thr Asp Leu Ser
            165                 170                 175
Pro Thr Asp Ile Ile Thr Tyr Ile Glu Ile Leu Ala Glu Ser Ser Ser
        180                 185                 190
Leu Leu Gly Tyr Lys Asn Asn Thr Ile Ser Ala Lys Asp Thr Leu Ser
        195                 200                 205
Asn Ser Thr Leu Thr Glu Phe Val Lys Thr Val Asn Asn Phe Val Gln
    210                 215                 220
Arg Asp Thr Phe Val Val Trp Asp Lys Leu Ser Val Asn His Arg Arg
225                 230                 235                 240
Thr His Leu Thr Lys Leu Met Thr Val Glu Gln Ala Thr Leu Arg
            245                 250                 255
Ile Ser Gln Ser Phe Gln Lys Thr Thr Glu Phe Asp Thr Asn Ser Thr
        260                 265                 270
Asp Ile Ala Leu Lys Val Phe Phe Phe Asp Ser Tyr Asn Met Lys His
        275                 280                 285
Ile His Pro His Met Asn Met Asp Gly Asp Tyr Ile Asn Ile Phe Pro
     290                 295                 300
Lys Arg Lys Ala Ala Tyr Asp Ser Asn Gly Asn Val Ala Val Ala Phe
305                 310                 315                 320
Leu Tyr Tyr Lys Ser Ile Gly Pro Leu Leu Ser Ser Ser Asp Asn Phe
            325                 330                 335
Leu Leu Lys Pro Gln Asn Tyr Asp Asn Ser Glu Glu Glu Glu Arg Val
            340                 345                 350
Ile Ser Ser Val Ile Ser Val Ser Met Ser Ser Asn Pro Pro Thr Leu
        355                 360                 365
Tyr Glu Leu Glu Lys Ile Thr Phe Thr Leu Ser His Arg Lys Val Thr
    370                 375                 380
Asp Arg Tyr Arg Ser Leu Cys Ala Phe Trp Asn Tyr Ser Pro Asp Thr
385                 390                 395                 400
Met Asn Gly Ser Trp Ser Ser Glu Gly Cys Glu Leu Thr Tyr Ser Asn
            405                 410                 415
Glu Thr His Thr Ser Cys Arg Cys Asn His Leu Thr His Phe Ala Ile
        420                 425                 430
Leu Met Ser Ser Gly Pro Ser Ile Gly Ile Lys Asp Tyr Asn Ile Leu
        435                 440                 445
Thr Arg Ile Thr Gln Leu Gly Ile Ile Ile Ser Leu Ile Cys Leu Ala
    450                 455                 460
Ile Cys Ile Phe Thr Phe Trp Phe Phe Ser Glu Ile Gln Ser Thr Arg
465                 470                 475                 480
```

94

```
Thr Thr Ile His Lys Asn Leu Cys Cys Ser Leu Phe Leu Ala Glu Leu
              485                 490                 495
Val Phe Leu Val Gly Ile Asn Thr Asn Thr Asn Lys Leu Xaa Ser Val
              500                 505                 510
Ser Ile Ile Ala Gly Leu Leu His Tyr Phe Phe Leu Ala Ala Phe Ala
              515                 520                 525
Trp Met Cys Ile Glu Gly Ile His Leu Tyr Leu Ile Val Val Gly Val
          530                 535                 540
Ile Tyr Asn Lys Gly Phe Leu His Lys Asn Phe Tyr Ile Phe Gly Tyr
545                 550                 555                 560
Leu Ser Pro Ala Val Val Val Gly Phe Ser Ala Ala Leu Gly Tyr Arg
                  565                 570                 575
Tyr Tyr Gly Thr Thr Lys Val Cys Trp Leu Ser Thr Glu Thr His Phe
              580                 585                 590
Ile Trp Ser Phe Ile Gly Pro Ala Cys Leu Ile Ile Leu Val Asn Leu
          595                 600                 605
Leu Ala Phe Gly Val Ile Ile Tyr Lys Val Phe Arg His Thr Ala Gly
      610                 615                 620
Leu Lys Pro Glu Val Ser Cys Phe Glu Asn Ile Arg Ser Cys Ala Arg
625                 630                 635                 640
Gly Ala Leu Ala Leu Leu Phe Leu Leu Gly Thr Thr Trp Ile Phe Gly
                  645                 650                 655
Val Leu His Val Val His Ala Ser Val Val Thr Ala Tyr Leu Phe Thr
              660                 665                 670
Val Ser Asn Ala Phe Gln Gly Met Phe Ile Phe Leu Phe Leu Cys Val
          675                 680                 685
Leu Ser Arg Lys Ile Gln Glu Glu Tyr Tyr Arg Leu Phe Lys Asn Val
      690                 695                 700
Pro Cys Cys Phe Gly Cys Leu Arg
705                 710
```

        <210> 93
        <211> 948
        <212> PRT
        <213> Homo sapiens

        <400> 93

```
Met Ile Leu Ser Leu Leu Phe Ser Leu Gly Gly Pro Leu Gly Trp Gly
1                 5                 10                  15
Leu Leu Gly Ala Trp Ala Gln Ala Ser Ser Thr Ser Leu Ser Asp Leu
              20                  25                  30
Gln Ser Ser Arg Thr Pro Gly Val Trp Lys Ala Glu Ala Glu Asp Thr
              35                  40                  45
Ser Lys Asp Pro Val Gly Arg Asn Trp Cys Pro Tyr Pro Met Ser Lys
      50                  55                  60
Leu Val Thr Leu Leu Ala Leu Cys Lys Thr Glu Lys Phe Leu Ile His
65                  70                  75                  80
Ser Gln Gln Pro Cys Pro Gln Gly Ala Pro Asp Cys Gln Lys Val Lys
                  85                  90                  95
Val Met Tyr Arg Met Ala His Lys Pro Val Tyr Gln Val Lys Gln Lys
              100                 105                 110
Val Leu Thr Ser Leu Ala Trp Arg Cys Cys Pro Gly Tyr Thr Gly Pro
          115                 120                 125
Asn Cys Glu His His Asp Ser Met Ala Ile Pro Glu Pro Ala Asp Pro
      130                 135                 140
Gly Asp Ser His Gln Glu Pro Gln Asp Gly Pro Val Ser Phe Lys Pro
145                 150                 155                 160
Gly His Leu Ala Ala Val Ile Asn Glu Val Glu Val Gln Gln Glu Gln
                  165                 170                 175
Gln Glu His Leu Leu Gly Asp Leu Gln Asn Asp Val His Arg Val Ala
              180                 185                 190
```

```
Asp Ser Leu Pro Gly Leu Trp Lys Ala Leu Pro Gly Asn Leu Thr Ala
        195                 200             205
Ala Val Met Glu Ala Asn Gln Thr Gly His Glu Phe Pro Asp Arg Ser
    210                 215             220
Leu Glu Gln Val Leu Leu Pro His Val Asp Thr Phe Leu Gln Val His
225                 230             235                 240
Phe Ser Pro Ile Trp Arg Ser Phe Asn Gln Ser Leu His Ser Leu Thr
            245             250             255
Gln Ala Ile Arg Asn Leu Ser Leu Asp Val Glu Ala Asn Arg Gln Ala
        260             265             270
Ile Ser Arg Val Gln Asp Ser Ala Val Ala Arg Ala Asp Phe Gln Glu
        275             280             285
Leu Gly Ala Lys Phe Glu Ala Lys Val Gln Glu Asn Thr Gln Arg Val
    290             295             300
Gly Gln Leu Arg Gln Asp Val Glu Asp Arg Leu His Ala Gln His Phe
305             310             315                 320
Thr Leu His Arg Ser Ile Ser Glu Leu Gln Ala Asp Val Asp Thr Lys
            325             330             335
Leu Lys Arg Leu His Lys Ala Gln Glu Ala Pro Gly Thr Asn Gly Ser
        340             345             350
Leu Val Leu Ala Thr Pro Gly Ala Gly Ala Arg Pro Glu Pro Asp Ser
        355             360             365
Leu Gln Ala Arg Leu Gly Gln Leu Gln Arg Asn Leu Ser Glu Leu His
    370             375             380
Met Thr Thr Ala Arg Arg Glu Glu Glu Leu Gln Tyr Thr Leu Glu Asp
385             390             395                 400
Met Arg Ala Thr Leu Thr Arg His Val Asp Glu Ile Lys Glu Leu Tyr
            405             410             415
Ser Glu Ser Asp Glu Thr Phe Asp Gln Ile Ser Lys Val Glu Arg Gln
        420             425             430
Val Glu Glu Leu Gln Val Asn His Thr Ala Leu Arg Glu Leu Arg Val
    435             440             445
Ile Leu Met Glu Lys Ser Leu Ile Met Glu Glu Asn Lys Glu Glu Val
    450             455             460
Glu Arg Gln Leu Leu Glu Leu Asn Leu Thr Leu Gln His Leu Gln Gly
465             470             475                 480
Gly His Ala Asp Leu Ile Lys Tyr Val Lys Asp Cys Asn Cys Gln Lys
            485             490             495
Leu Tyr Leu Asp Leu Asp Val Ile Arg Glu Gly Gln Arg Asp Ala Thr
            500             505             510
Arg Ala Leu Glu Glu Thr Gln Val Ser Leu Asp Glu Arg Arg Gln Leu
        515             520             525
Asp Gly Ser Ser Leu Gln Ala Leu Gln Asn Ala Val Asp Ala Val Ser
    530             535             540
Leu Ala Val Asp Ala His Lys Ala Glu Gly Glu Arg Ala Arg Ala Ala
545             550             555                 560
Thr Ser Arg Leu Arg Ser Gln Val Gln Ala Leu Asp Asp Glu Val Gly
            565             570             575
Ala Leu Lys Ala Ala Ala Ala Glu Ala Arg His Glu Val Arg Gln Leu
        580             585             590
His Ser Ala Phe Ala Ala Leu Leu Glu Asp Ala Leu Arg His Glu Ala
        595             600             605
Val Leu Ala Ala Leu Phe Gly Glu Glu Val Leu Glu Glu Met Ser Glu
    610             615             620
Gln Thr Pro Gly Pro Leu Pro Leu Ser Tyr Glu Gln Ile Arg Val Ala
625             630             635                 640
Leu Gln Asp Ala Ala Ser Gly Leu Gln Glu Gln Ala Leu Gly Trp Asp
            645             650             655
Glu Leu Ala Ala Arg Val Thr Ala Leu Glu Gln Ala Ser Glu Pro Pro
        660             665             670
```

96

Arg Pro Ala Glu His Leu Glu Pro Ser His Asp Ala Gly Arg Glu Glu
        675   680   685
Ala Ala Thr Thr Ala Leu Ala Gly Leu Ala Arg Glu Leu Gln Ser Leu
        690   695   700
Ser Asn Asp Val Lys Asn Val Gly Arg Cys Cys Glu Ala Glu Ala Gly
705   710   715   720
Ala Gly Ala Ala Ser Leu Asn Ala Ser Leu Asp Gly Leu His Asn Ala
                725   730   735
Leu Phe Ala Thr Gln Arg Ser Leu Glu Gln His Gln Arg Leu Phe His
            740   745   750
Ser Leu Phe Gly Asn Phe Gln Gly Leu Met Glu Ala Asn Val Ser Leu
        755   760   765
Asp Leu Gly Lys Leu Gln Thr Met Leu Ser Arg Lys Gly Lys Lys Gln
    770   775   780
Gln Lys Asp Leu Glu Ala Pro Arg Lys Arg Asp Lys Lys Glu Ala Glu
785   790   795   800
Pro Leu Val Asp Ile Arg Val Thr Gly Pro Val Pro Gly Ala Leu Gly
            805   810   815
Ala Ala Leu Trp Glu Ala Ser Pro Val Ala Phe Tyr Ala Ser Phe Ser
        820   825   830
Glu Gly Thr Ala Ala Leu Gln Thr Val Lys Phe Asn Thr Thr Tyr Ile
        835   840   845
Asn Ile Gly Ser Ser Tyr Phe Pro Glu His Gly Tyr Phe Arg Ala Pro
    850   855   860
Glu Arg Gly Val Tyr Leu Phe Ala Val Ser Val Glu Phe Gly Pro Gly
865   870   875   880
Pro Gly Thr Gly Gln Leu Val Phe Gly His His Arg Thr Pro Val
            885   890   895
Cys Thr Thr Gly Gln Gly Ser Gly Ser Thr Ala Thr Val Phe Ala Met
            900   905   910
Ala Glu Leu Gln Lys Gly Glu Arg Val Trp Phe Glu Leu Thr Gln Gly
        915   920   925
Ser Ile Thr Lys Arg Ser Leu Ser Gly Thr Ala Phe Gly Gly Phe Leu
    930   935   940
Met Phe Lys Thr
945

        <210> 94
        <211> 647
        <212> PRT
        <213> Homo sapiens

        <400> 94
Met Gly Lys Asp Phe Met Thr Lys Thr Pro Lys Ala Phe Ala Thr Lys
1   5   10   15
Ala Lys Ile Asp Lys Trp Asp Leu Ile Lys Leu Lys Ser Phe Cys Thr
        20   25   30
Ala Lys Glu Thr Ile Ile Arg Val Asn Ser Gln Pro Thr Asp Trp Gln
    35   40   45
Lys Thr Phe Ala Ile Tyr Pro Ser Asp Lys Gly Val Ile Ala Arg Ile
    50   55   60
Tyr Lys Glu Leu Glu Gln Ile Tyr Lys Lys Lys Pro Thr Lys Thr
65   70   75   80
Leu Arg Thr His Phe Leu Ser Arg Pro Lys Gly Asn Cys Trp Pro Leu
            85   90   95
Gly Pro Arg Gly Asp Ser Trp Gln Leu Gly Gly Pro Ser Gly Ala Arg
        100   105   110
Ala Glu Gly Lys Gly Gly Gly Thr Gly Leu Gly Lys Pro Ala Val Glu
        115   120   125
Gly Gly Asp Arg Ala Pro Asp Thr Ala Leu Arg Pro Arg Ala Gly Gln
    130   135   140

97

```
Ile Gln Val Gly Ser Ser Ser Ala Cys Gly Ala Ser Glu Asn Glu Ala
145             150                 155                 160
Gly Val Arg Pro Val Pro Pro Leu Ala Gly Ala Leu Ala Arg Ala Gly
            165                 170                 175
Arg Arg Arg Thr Pro His Cys Arg Pro Cys Trp Leu Leu Gly Leu Gly
            180                 185                 190
Gly Leu Leu Gln Pro Ala Pro Arg Tyr His Glu Ala Ala Gly Gly Arg
        195                 200                 205
Gly Gly Leu His Pro Ala Arg Trp Gly Ala Gln His Arg Ala Cys Gly
    210                 215                 220
Arg Arg Ala Ala Arg Cys Ala Arg Ala Pro Ala Gly Arg Pro Arg Ala
225                 230                 235                 240
Arg Arg Gly Leu Gln Arg Pro Ala Val Leu Gly Arg Thr Gly Ala Gln
            245                 250                 255
Ala Phe Pro Leu His Pro Gly Glu Arg Ala Phe Ala Gly Phe Leu Leu
            260                 265                 270
Ala Val Leu Arg Pro Arg Arg Ser Arg Lys Arg His Ala Ala Val Gly
        275                 280                 285
Gly Gly Ala Pro Thr Leu Leu His Arg Ala Glu Met Arg Gly Thr Pro
    290                 295                 300
Gly His Arg Trp Gly Arg Ala Arg Ser Trp Lys Glu Met Arg Cys His
305                 310                 315                 320
Leu Arg Ala Asn Gly Tyr Leu Cys Lys Tyr Gln Phe Glu Val Leu Cys
                325                 330                 335
Pro Ala Pro Arg Pro Gly Ala Ala Ser Asn Leu Ser Tyr Arg Ala Pro
            340                 345                 350
Phe Gln Leu His Ser Ala Ala Leu Asp Phe Ser Pro Pro Gly Thr Glu
        355                 360                 365
Val Ser Ala Leu Cys Arg Gly Gln Leu Pro Ile Ser Val Thr Cys Ile
    370                 375                 380
Ala Asp Glu Ile Gly Ala Arg Trp Asp Lys Leu Ser Gly Asp Val Leu
385                 390                 395                 400
Cys Pro Cys Pro Gly Arg Tyr Leu Arg Ala Gly Lys Cys Ala Glu Leu
            405                 410                 415
Pro Asn Cys Leu Asp Asp Leu Gly Gly Phe Ala Cys Glu Cys Ala Thr
            420                 425                 430
Gly Phe Glu Leu Gly Lys Asp Gly Arg Ser Cys Val Thr Ser Gly Glu
        435                 440                 445
Gly Gln Pro Thr Leu Gly Gly Thr Gly Val Pro Thr Arg Arg Pro Pro
    450                 455                 460
Ala Thr Ala Thr Ser Pro Val Pro Gln Arg Thr Trp Pro Ile Arg Val
465                 470                 475                 480
Asp Glu Lys Leu Gly Glu Thr Pro Leu Val Pro Glu Gln Asp Asn Ser
            485                 490                 495
Val Thr Ser Ile Pro Glu Ile Pro Arg Trp Gly Ser Gln Ser Thr Met
            500                 505                 510
Ser Thr Leu Gln Met Ser Leu Gln Ala Glu Ser Lys Ala Thr Ile Thr
        515                 520                 525
Pro Ser Gly Ser Val Ile Ser Lys Phe Asn Ser Thr Thr Ser Ser Ala
    530                 535                 540
Thr Pro Gln Ala Phe Asp Ser Ser Ser Ala Val Val Phe Ile Phe Val
545                 550                 555                 560
Ser Thr Ala Val Val Val Leu Val Ile Leu Thr Met Thr Val Leu Gly
            565                 570                 575
Leu Val Lys Leu Cys Phe His Glu Ser Pro Ser Ser Gln Pro Arg Lys
        580                 585                 590
Glu Ser Met Gly Pro Pro Gly Leu Glu Ser Asp Pro Glu Pro Ala Ala
    595                 600                 605
Leu Gly Ser Ser Ser Ala His Cys Thr Asn Asn Gly Val Lys Val Gly
    610                 615                 620
```

98

```
Asp Cys Asp Leu Arg Asp Arg Ala Glu Gly Ala Leu Leu Ala Glu Ser
625                 630                 635                 640
Pro Leu Gly Ser Ser Asp Ala
                645


        <210> 95
        <211> 462
        <212> PRT
        <213> Homo sapiens


        <400> 95
Met Ile Gln Thr Val Pro Asp Pro Ala Ala His Ile Lys Glu Ala Leu
  1               5                 10                  15
Ser Val Val Ser Glu Asp Gln Ser Leu Phe Glu Cys Ala Tyr Gly Thr
                20                  25                  30
Pro His Leu Ala Lys Thr Glu Met Thr Ala Ser Ser Ser Ser Asp Tyr
        35                  40                  45
Gly Gln Thr Ser Lys Met Ser Pro Arg Val Pro Gln Gln Asp Trp Leu
        50                  55                  60
Ser Gln Pro Pro Ala Arg Val Thr Ile Lys Met Glu Cys Asn Pro Ser
65                  70                  75                  80
Gln Val Asn Gly Ser Arg Asn Ser Pro Asp Glu Cys Ser Val Ala Lys
                85                  90                  95
Gly Gly Lys Met Val Gly Ser Pro Asp Thr Val Gly Met Asn Tyr Gly
            100                 105                 110
Ser Tyr Met Glu Glu Lys His Met Pro Pro Pro Asn Met Thr Thr Asn
            115                 120                 125
Glu Arg Arg Val Ile Val Pro Ala Asp Pro Thr Leu Trp Ser Thr Asp
        130                 135                 140
His Val Arg Gln Trp Leu Glu Trp Ala Val Lys Glu Tyr Gly Leu Pro
145                 150                 155                 160
Asp Val Asn Ile Leu Leu Phe Gln Asn Ile Asp Gly Lys Glu Leu Cys
                165                 170                 175
Lys Met Thr Lys Asp Asp Phe Gln Arg Leu Thr Pro Ser Tyr Asn Ala
            180                 185                 190
Asp Ile Leu Leu Ser His Leu His Tyr Leu Arg Glu Thr Pro Leu Pro
        195                 200                 205
His Leu Thr Ser Asp Asp Val Asp Lys Ala Leu Gln Asn Ser Pro Arg
        210                 215                 220
Leu Met His Ala Arg Asn Thr Asp Leu Pro Tyr Glu Pro Pro Arg Arg
225                 230                 235                 240
Ser Ala Trp Thr Gly His Gly His Pro Thr Pro Gln Ser Lys Ala Ala
            245                 250                 255
Gln Pro Ser Pro Ser Thr Val Pro Lys Thr Glu Asp Gln Arg Pro Gln
            260                 265                 270
Leu Asp Pro Tyr Gln Ile Leu Gly Pro Thr Ser Ser Arg Leu Ala Asn
            275                 280                 285
Pro Gly Ser Gly Gln Ile Gln Leu Trp Gln Phe Leu Leu Glu Leu Leu
        290                 295                 300
Ser Asp Ser Ser Asn Ser Ser Cys Ile Thr Trp Glu Gly Thr Asn Gly
305                 310                 315                 320
Glu Phe Lys Met Thr Asp Pro Asp Glu Val Ala Arg Arg Trp Gly Glu
            325                 330                 335
Arg Lys Ser Lys Pro Asn Met Asn Tyr Asp Lys Leu Ser Arg Ala Leu
            340                 345                 350
Arg Tyr Tyr Tyr Asp Lys Asn Ile Met Thr Lys Val His Gly Lys Arg
            355                 360                 365
Tyr Ala Tyr Lys Phe Asp Phe His Gly Ile Ala Gln Ala Leu Gln Pro
        370                 375                 380
His Pro Pro Glu Ser Ser Leu Tyr Lys Tyr Pro Ser Asp Leu Pro Tyr
385                 390                 395                 400
```

99

Met Gly Ser Tyr His Ala His Pro Gln Lys Met Asn Phe Val Ala Pro
            405   410   415
His Pro Pro Ala Leu Pro Val Thr Ser Ser Ser Phe Phe Ala Ala Pro
            420   425   430
Asn Pro Tyr Trp Asn Ser Pro Thr Gly Gly Ile Tyr Pro Asn Thr Arg
            435   440   445
Leu Pro Thr Ser His Met Pro Ser His Leu Gly Thr Tyr Tyr
    450   455   460

        <210> 96
        <211> 503
        <212> PRT
        <213> Homo sapiens

        <400> 96
Met Thr Leu Gly Ser Pro Arg Lys Gly Leu Leu Met Leu Leu Met Ala
    1   5   10   15
Leu Val Thr Gln Gly Asp Pro Val Lys Pro Ser Arg Gly Pro Leu Val
            20   25   30
Thr Cys Thr Cys Glu Ser Pro His Cys Lys Gly Pro Thr Cys Arg Gly
            35   40   45
Ala Trp Cys Thr Val Val Leu Val Arg Glu Glu Gly Arg His Pro Gln
    50   55   60
Glu His Arg Gly Cys Gly Asn Leu His Arg Glu Leu Cys Arg Gly Arg
65   70   75   80
Pro Thr Glu Phe Val Asn His Tyr Cys Cys Asp Ser His Leu Cys Asn
            85   90   95
His Asn Val Ser Leu Val Leu Glu Ala Thr Gln Pro Pro Ser Glu Gln
            100   105   110
Pro Gly Thr Asp Gly Gln Leu Ala Leu Ile Leu Gly Pro Val Leu Ala
            115   120   125
Leu Leu Ala Leu Val Ala Leu Gly Val Leu Gly Leu Trp His Val Arg
    130   135   140
Arg Arg Gln Glu Lys Gln Arg Gly Leu His Ser Glu Leu Gly Glu Ser
145   150   155   160
Ser Leu Ile Leu Lys Ala Ser Glu Gln Gly Asp Thr Met Leu Gly Asp
            165   170   175
Leu Leu Asp Ser Asp Cys Thr Thr Gly Ser Gly Ser Gly Leu Pro Phe
            180   185   190
Leu Val Gln Arg Thr Val Ala Arg Gln Val Ala Leu Val Glu Cys Val
    195   200   205
Gly Lys Gly Arg Tyr Gly Glu Val Trp Arg Gly Leu Trp His Gly Glu
    210   215   220
Ser Val Ala Val Lys Ile Phe Ser Ser Arg Asp Glu Gln Ser Trp Phe
225   230   235   240
Arg Glu Thr Glu Ile Tyr Asn Thr Val Leu Leu Arg His Asp Asn Ile
            245   250   255
Leu Gly Phe Ile Ala Ser Asp Met Thr Ser Arg Asn Ser Ser Thr Gln
            260   265   270
Leu Trp Leu Ile Thr His Tyr His Glu His Gly Ser Leu Tyr Asp Phe
            275   280   285
Leu Gln Arg Gln Thr Leu Glu Pro His Leu Ala Leu Arg Leu Ala Val
            290   295   300
Ser Ala Ala Cys Gly Leu Ala His Leu His Val Glu Ile Phe Gly Thr
305   310   315   320
Gln Gly Lys Pro Ala Ile Ala His Arg Asp Phe Lys Ser Arg Asn Val
            325   330   335
Leu Val Lys Ser Asn Leu Gln Cys Cys Ile Ala Asp Leu Gly Leu Ala
            340   345   350
Val Met His Ser Gln Gly Ser Asp Tyr Leu Asp Ile Gly Asn Asn Pro
            355   360   365

100

```
Arg Val Gly Thr Lys Arg Tyr Met Ala Pro Glu Val Leu Asp Glu Gln
    370             375             380
Ile Arg Thr Asp Cys Phe Glu Ser Tyr Lys Trp Thr Asp Ile Trp Ala
385             390             395             400
Phe Gly Leu Val Leu Trp Glu Ile Ala Arg Arg Thr Ile Val Asn Gly
            405             410             415
Ile Val Glu Asp Tyr Arg Pro Pro Phe Tyr Asp Val Val Pro Asn Asp
            420             425             430
Pro Ser Phe Glu Asp Met Lys Lys Val Val Cys Val Asp Gln Gln Thr
            435             440             445
Pro Thr Ile Pro Asn Arg Leu Ala Ala Asp Pro Val Leu Ser Gly Leu
    450             455             460
Ala Gln Met Met Arg Glu Cys Trp Tyr Pro Asn Pro Ser Ala Arg Leu
465             470             475             480
Thr Ala Leu Arg Ile Lys Lys Thr Leu Gln Lys Ile Ser Asn Ser Pro
            485             490             495
Glu Lys Pro Lys Val Ile Gln
            500

        <210> 97
        <211> 54
        <212> PRT
        <213> Homo sapiens

        <400> 97
Met Glu Trp Asn Gly Met Ala Trp Asn Arg Ile Lys Trp Asn Gly Ile
1               5               10              15
Asn Ser Ser Gly Met Glu Trp Asn Gly Met Glu Trp Asn Ala Val Gln
            20              25              30
Cys Asn Arg Met Glu Trp Asn Glu Leu Glu Leu Thr Gly Met Glu Trp
        35              40              45
Asn Gly Met His Leu Asn
    50

        <210> 98
        <211> 275
        <212> PRT
        <213> Homo sapiens

        <400> 98
Met Ser Ser Phe Gly Tyr Arg Thr Leu Thr Val Ala Leu Phe Thr Leu
1               5               10              15
Ile Cys Cys Pro Gly Ser Asp Glu Lys Val Phe Glu Val His Val Arg
            20              25              30
Pro Lys Lys Leu Ala Val Glu Pro Lys Gly Ser Leu Glu Val Asn Cys
        35              40              45
Ser Thr Thr Cys Asn Gln Pro Glu Val Gly Gly Leu Glu Thr Ser Leu
    50              55              60
Asn Lys Ile Leu Leu Asp Glu Gln Ala Gln Trp Lys His Tyr Leu Val
65              70              75              80
Ser Asn Ile Ser His Asp Thr Val Leu Gln Cys His Phe Thr Cys Ser
            85              90              95
Gly Lys Gln Glu Ser Met Asn Ser Asn Val Ser Val Tyr Gln Pro Pro
            100             105             110
Arg Gln Val Ile Leu Thr Leu Gln Pro Thr Leu Val Ala Val Gly Lys
        115             120             125
Ser Phe Thr Ile Glu Cys Arg Val Pro Thr Val Glu Pro Leu Asp Ser
        130             135             140
Leu Thr Leu Phe Leu Phe Arg Gly Asn Glu Thr Leu His Tyr Glu Thr
145             150             155             160
```

```
Phe Gly Lys Ala Ala Pro Ala Pro Gln Glu Ala Thr Ala Thr Phe Asn
                165                 170             175
Ser Thr Ala Asp Arg Glu Asp Gly His Arg Asn Phe Ser Cys Leu Ala
            180             185             190
Val Leu Asp Leu Met Ser Arg Gly Gly Asn Ile Phe His Lys His Ser
        195             200             205
Ala Pro Lys Met Leu Glu Ile Tyr Glu Pro Val Ser Asp Ser Gln Met
    210             215             220
Val Ile Ile Val Thr Val Val Ser Val Leu Leu Ser Leu Phe Val Thr
225             230             235             240
Ser Val Leu Leu Cys Phe Ile Phe Gly Gln His Leu Arg Gln Gln Arg
            245             250             255
Met Gly Thr Tyr Gly Val Arg Ala Ala Trp Arg Arg Leu Pro Gln Ala
            260             265             270
Phe Arg Pro
    275


    <210> 99
    <211> 784
    <212> PRT
    <213> Homo sapiens


    <400> 99
Met Gln Arg Leu Met Met Leu Leu Ala Thr Ser Gly Ala Cys Leu Gly
1               5               10              15
Leu Leu Ala Val Ala Ala Val Ala Ala Ala Gly Ala Asn Pro Ala Gln
            20              25              30
Arg Asp Thr His Ser Leu Leu Pro Thr His Arg Arg Gln Lys Arg Asp
        35              40              45
Trp Ile Trp Asn Gln Met His Ile Asp Glu Glu Lys Asn Thr Ser Leu
    50              55              60
Pro His His Val Gly Lys Ile Lys Ser Ser Val Ser Arg Lys Asn Ala
 65             70              75                          80
Lys Tyr Leu Leu Lys Gly Glu Tyr Val Gly Lys Val Phe Arg Val Asp
            85              90              95
Ala Glu Thr Gly Asp Val Phe Ala Ile Glu Arg Leu Asp Arg Glu Asn
            100             105             110
Ile Ser Glu Tyr His Leu Thr Ala Val Ile Val Asp Lys Asp Thr Gly
        115             120             125
Glu Asn Leu Glu Thr Pro Ser Ser Phe Thr Ile Lys Val His Asp Val
    130             135             140
Asn Asp Asn Trp Pro Val Phe Thr His Arg Leu Phe Asn Ala Ser Val
145             150             155             160
Pro Glu Ser Ser Ala Val Gly Thr Ser Val Ile Ser Val Thr Ala Val
            165             170             175
Asp Ala Asp Asp Pro Thr Val Gly Asp His Ala Ser Val Met Tyr Gln
            180             185             190
Ile Leu Lys Gly Lys Glu Tyr Phe Ala Ile Asp Asn Ser Gly Arg Ile
        195             200             205
Ile Thr Ile Thr Lys Ser Leu Asp Arg Glu Lys Gln Ala Arg Tyr Glu
    210             215             220
Ile Val Val Glu Ala Arg Asp Ala Gln Gly Leu Arg Gly Asp Ser Gly
225             230             235             240
Thr Ala Thr Val Leu Val Thr Leu Gln Asp Ile Asn Asp Asn Phe Pro
            245             250             255
Phe Phe Thr Gln Thr Lys Tyr Thr Phe Val Val Pro Glu Asp Thr Arg
            260             265             270
Val Gly Thr Ser Val Gly Ser Leu Phe Val Glu Asp Pro Asp Glu Pro
            275             280             285
Gln Asn Arg Met Thr Lys Tyr Ser Ile Leu Arg Gly Asp Tyr Gln Asp
    290             295             300
```

102

Ala Phe Thr Ile Glu Thr Asn Pro Ala His Asn Glu Gly Ile Ile Lys
305   310   315   320
Pro Met Lys Pro Leu Asp Tyr Glu Tyr Ile Gln Gln Tyr Ser Phe Ile
            325   330   335
Val Glu Ala Thr Asp Pro Thr Ile Asp Leu Arg Tyr Met Ser Pro Pro
            340   345   350
Ala Gly Asn Arg Ala Gln Val Ile Ile Asn Ile Thr Asp Val Asp Glu
            355   360   365
Pro Pro Ile Phe Gln Gln Pro Phe Tyr His Phe Gln Leu Lys Glu Asn
370   375   380
Gln Lys Lys Pro Leu Ile Gly Thr Val Leu Ala Met Asp Pro Asp Ala
385   390   395   400
Ala Arg His Ser Ile Gly Tyr Ser Ile Arg Arg Thr Ser Asp Lys Gly
            405   410   415
Gln Phe Phe Arg Val Thr Lys Lys Gly Asp Ile Tyr Asn Glu Lys Glu
            420   425   430
Leu Asp Arg Glu Val Tyr Pro Trp Tyr Asn Leu Thr Val Glu Ala Lys
            435   440   445
Glu Leu Asp Ser Thr Gly Thr Pro Thr Gly Lys Glu Ser Ile Val Gln
            450   455   460
Val His Ile Glu Val Leu Asp Glu Asn Asp Asn Ala Pro Glu Phe Ala
465   470   475   480
Lys Pro Tyr Gln Pro Lys Val Cys Glu Asn Ala Val His Gly Gln Leu
            485   490   495
Val Leu Gln Ile Ser Ala Ile Asp Lys Asp Ile Thr Pro Arg Asn Val
            500   505   510
Lys Phe Lys Phe Thr Leu Asn Thr Glu Asn Asn Phe Thr Leu Thr Asp
            515   520   525
Asn His Asp Asn Thr Ala Asn Ile Thr Val Lys Tyr Gly Gln Phe Asp
            530   535   540
Arg Glu His Thr Lys Val His Phe Leu Pro Val Val Ile Ser Asp Asn
545   550   555   560
Gly Met Pro Ser Arg Thr Gly Thr Ser Thr Leu Thr Val Ala Val Cys
            565   570   575
Lys Cys Asn Glu Gln Gly Glu Phe Thr Phe Cys Glu Asp Met Ala Ala
            580   585   590
Gln Val Gly Val Ser Ile Gln Ala Val Val Ala Ile Leu Leu Cys Ile
            595   600   605
Leu Thr Ile Thr Val Ile Thr Leu Leu Ile Phe Leu Arg Arg Arg Leu
            610   615   620
Arg Lys Gln Ala Arg Ala His Gly Lys Ser Val Pro Glu Ile His Glu
625   630   635   640
Gln Leu Val Thr Tyr Asp Glu Glu Gly Gly Gly Glu Met Asp Thr Thr
            645   650   655
Ser Tyr Asp Val Ser Val Leu Asn Ser Val Arg Arg Gly Gly Ala Lys
            660   665   670
Pro Pro Arg Pro Ala Leu Asp Ala Arg Pro Ser Leu Tyr Ala Gln Val
            675   680   685
Gln Lys Pro Pro Arg His Ala Pro Gly Ala His Gly Gly Pro Gly Glu
            690   695   700
Met Ala Ala Met Ile Glu Val Lys Lys Asp Glu Ala Asp His Asp Gly
705   710   715   720
Asp Gly Pro Pro Tyr Asp Thr Leu His Ile Tyr Gly Tyr Glu Gly Ser
            725   730   735
Glu Ser Ile Ala Glu Ser Leu Ser Ser Leu Gly Thr Asp Ser Ser Asp
            740   745   750
Ser Asp Val Asp Tyr Asp Phe Leu Asn Asp Trp Gly Pro Arg Phe Lys
            755   760   765
Met Leu Ala Glu Leu Tyr Gly Ser Asp Pro Arg Glu Glu Leu Leu Tyr
            770   775   780

103

<210> 100
<211> 774
<212> PRT
<213> Homo sapiens

<400> 100
Met Glu Arg Pro Leu Cys Ser His Leu Cys Ser Cys Leu Ala Met Leu
1   5   10   15
Ala Leu Leu Ser Pro Leu Ser Leu Ala Gln Tyr Asp Ser Trp Pro His
            20   25   30
Tyr Pro Glu Tyr Phe Gln Gln Pro Ala Pro Glu Tyr His Gln Pro Gln
        35   40   45
Ala Pro Ala Asn Val Ala Lys Ile Gln Leu Arg Leu Ala Gly Gln Lys
    50   55   60
Arg Lys His Ser Glu Gly Arg Val Glu Val Tyr Tyr Asp Gly Gln Trp
65   70   75   80
Gly Thr Val Cys Asp Asp Asp Phe Ser Ile His Ala Ala His Val Val
                85   90   95
Cys Arg Glu Leu Gly Tyr Val Glu Ala Lys Ser Trp Thr Ala Ser Ser
            100   105   110
Ser Tyr Gly Lys Gly Glu Gly Pro Ile Trp Leu Asp Asn Leu His Cys
        115   120   125
Thr Gly Asn Glu Ala Thr Leu Ala Ala Cys Thr Ser Asn Gly Trp Gly
    130   135   140
Val Thr Asp Cys Lys His Thr Glu Asp Val Gly Val Val Cys Ser Asp
145   150   155   160
Lys Arg Ile Pro Gly Phe Lys Phe Asp Asn Ser Leu Ile Asn Gln Ile
                165   170   175
Glu Asn Leu Asn Ile Gln Val Glu Asp Ile Arg Ile Arg Ala Ile Leu
            180   185   190
Ser Thr Tyr Arg Lys Arg Thr Pro Val Met Glu Gly Tyr Val Glu Val
        195   200   205
Lys Glu Gly Lys Thr Trp Lys Gln Ile Cys Asp Lys His Trp Thr Ala
    210   215   220
Lys Asn Ser Arg Val Val Cys Gly Met Phe Gly Phe Pro Gly Glu Arg
225   230   235   240
Thr Tyr Asn Thr Lys Val Tyr Lys Met Phe Ala Ser Arg Arg Lys Gln
                245   250   255
Arg Tyr Trp Pro Phe Ser Met Asp Cys Thr Gly Thr Glu Ala His Ile
            260   265   270
Ser Ser Cys Lys Leu Gly Pro Gln Val Ser Leu Asp Pro Met Lys Asn
        275   280   285
Val Thr Cys Glu Asn Gly Leu Pro Ala Val Val Ser Cys Val Pro Gly
    290   295   300
Gln Val Phe Ser Pro Asp Gly Pro Ser Arg Phe Arg Lys Ala Tyr Lys
305   310   315   320
Pro Glu Gln Pro Leu Val Arg Leu Arg Gly Gly Ala Tyr Ile Gly Glu
                325   330   335
Gly Arg Val Glu Val Leu Lys Asn Gly Glu Trp Gly Thr Val Cys Asp
            340   345   350
Asp Lys Trp Asp Leu Val Ser Ala Ser Val Val Cys Arg Glu Leu Gly
        355   360   365
Phe Gly Ser Ala Lys Glu Ala Val Thr Gly Ser Arg Leu Gly Gln Gly
    370   375   380
Ile Gly Pro Ile His Leu Asn Glu Ile Gln Cys Thr Gly Asn Glu Lys
385   390   395   400
Ser Ile Ile Asp Cys Lys Phe Asn Ala Glu Ser Gln Gly Cys Asn His
                405   410   415
Glu Glu Asp Ala Gly Val Arg Cys Asn Thr Pro Ala Met Gly Leu Gln
            420   425   430

```
Lys Lys Leu Arg Leu Asn Gly Gly Arg Asn Pro Tyr Glu Gly Arg Val
        435                 440                 445
Glu Val Leu Val Glu Arg Asn Gly Ser Leu Val Trp Gly Met Val Cys
        450                 455                 460
Gly Gln Asn Trp Gly Ile Val Glu Ala Met Val Val Cys Arg Gln Leu
465                 470                 475                 480
Gly Leu Gly Phe Ala Ser Asn Ala Phe Gln Glu Thr Trp Tyr Trp His
                485                 490                 495
Gly Asp Val Asn Ser Asn Lys Val Val Met Ser Gly Val Lys Cys Ser
                500                 505                 510
Gly Thr Glu Leu Ser Leu Ala His Cys Arg His Asp Gly Glu Asp Val
        515                 520                 525
Ala Cys Pro Gln Gly Gly Val Gln Tyr Gly Ala Gly Val Ala Cys Ser
        530                 535                 540
Glu Thr Ala Pro Asp Leu Val Leu Asn Ala Glu Met Val Gln Gln Thr
545                 550                 555                 560
Thr Tyr Leu Glu Asp Arg Pro Met Phe Met Leu Gln Cys Ala Met Glu
                565                 570                 575
Glu Asn Cys Leu Ser Ala Ser Ala Ala Gln Thr Asp Pro Thr Thr Gly
        580                 585                 590
Tyr Arg Arg Leu Leu Arg Phe Ser Ser Gln Ile His Asn Asn Gly Gln
        595                 600                 605
Ser Asp Phe Arg Pro Lys Asn Gly Arg His Ala Trp Ile Trp His Asp
        610                 615                 620
Cys His Arg His Tyr His Ser Met Glu Val Phe Thr His Tyr Asp Leu
625                 630                 635                 640
Leu Asn Leu Asn Gly Thr Lys Val Ala Glu Gly His Lys Ala Ser Phe
                645                 650                 655
Cys Leu Glu Asp Thr Glu Cys Glu Gly Asp Ile Gln Lys Asn Tyr Glu
        660                 665                 670
Cys Ala Asn Phe Gly Asp Gln Gly Ile Thr Met Gly Cys Trp Asp Met
        675                 680                 685
Tyr Arg His Asp Ile Asp Cys Gln Trp Val Asp Ile Thr Asp Val Pro
        690                 695                 700
Pro Gly Asp Tyr Leu Phe Gln Val Val Ile Asn Pro Asn Phe Glu Val
705                 710                 715                 720
Ala Glu Ser Asp Tyr Ser Asn Asn Ile Met Lys Cys Arg Ser Arg Tyr
                725                 730                 735
Asp Gly His Arg Ile Trp Met Tyr Asn Cys His Ile Gly Gly Ser Phe
                740                 745                 750
Ser Glu Glu Thr Glu Lys Lys Phe Glu His Phe Ser Gly Leu Leu Asn
        755                 760                 765
Asn Gln Leu Ser Pro Gln
        770

        <210> 101
        <211> 1138
        <212> PRT
        <213> Homo sapiens

        <400> 101
Met Val Trp Arg Val Pro Pro Phe Leu Leu Pro Ile Leu Phe Leu Ala
1                 5                 10                  15
Ser His Val Gly Ala Ala Val Asp Leu Thr Leu Leu Ala Asn Leu Arg
                20                  25                  30
Leu Thr Asp Pro Gln Arg Phe Phe Leu Thr Cys Val Ser Gly Glu Ala
        35                  40                  45
Gly Ala Gly Arg Gly Ser Asp Ala Trp Gly Pro Pro Leu Leu Leu Glu
        50                  55                  60
Lys Asp Asp Arg Ile Val Arg Thr Pro Pro Gly Pro Pro Leu Arg Leu
65                  70                  75                  80
```

105

```
Ala Arg Asn Gly Ser His Gln Val Thr Leu Arg Gly Phe Ser Lys Pro
              85                  90                  95
Ser Asp Leu Val Gly Val Phe Ser Cys Val Gly Gly Ala Gly Ala Arg
              100             105                 110
Arg Thr Arg Val Ile Tyr Val His Asn Ser Pro Gly Ala His Leu Leu
              115             120                 125
Pro Asp Lys Val Thr His Thr Val Asn Lys Gly Asp Thr Ala Val Leu
              130             135                 140
Ser Ala Arg Val His Lys Glu Lys Gln Thr Asp Val Ile Trp Lys Ser
   145             150                 155                 160
Asn Gly Ser Tyr Phe Tyr Thr Leu Asp Trp His Glu Ala Gln Asp Gly
              165             170                 175
Arg Phe Leu Leu Gln Leu Pro Asn Val Gln Pro Pro Ser Ser Gly Ile
              180             185                 190
Tyr Ser Ala Thr Tyr Leu Glu Ala Ser Pro Leu Gly Ser Ala Phe Phe
              195             200                 205
Arg Leu Ile Val Arg Gly Cys Gly Ala Gly Arg Trp Gly Pro Gly Cys
   210             215                 220
Thr Lys Glu Cys Pro Gly Cys Leu His Gly Gly Val Cys His Asp His
   225             230                 235                 240
Asp Gly Glu Cys Val Cys Pro Pro Gly Phe Thr Gly Thr Arg Cys Glu
              245             250                 255
Gln Ala Cys Arg Glu Gly Arg Phe Gly Gln Ser Cys Gln Glu Gln Cys
              260             265                 270
Pro Gly Ile Ser Gly Cys Arg Gly Leu Thr Phe Cys Leu Pro Asp Pro
              275             280                 285
Tyr Gly Cys Ser Cys Gly Ser Gly Trp Arg Gly Ser Gln Cys Gln Glu
              290             295                 300
Ala Cys Ala Pro Gly His Phe Gly Ala Asp Cys Arg Leu Gln Cys Gln
   305             310                 315                 320
Cys Gln Asn Gly Gly Thr Cys Asp Arg Phe Ser Gly Cys Val Cys Pro
              325             330                 335
Ser Gly Trp His Gly Val His Cys Glu Lys Ser Asp Arg Ile Pro Gln
              340             345                 350
Ile Leu Asn Met Ala Ser Glu Leu Glu Phe Asn Leu Glu Thr Met Pro
              355             360                 365
Arg Ile Asn Cys Ala Ala Ala Gly Asn Pro Phe Pro Val Arg Gly Ser
   370             375                 380
Ile Glu Leu Arg Lys Pro Asp Gly Thr Val Leu Leu Ser Thr Lys Ala
   385             390                 395                 400
Ile Val Glu Pro Glu Lys Thr Thr Ala Glu Phe Glu Val Pro Arg Leu
              405             410                 415
Val Leu Ala Asp Ser Gly Phe Trp Glu Cys Arg Val Ser Thr Ser Gly
              420             425                 430
Gly Gln Asp Ser Arg Arg Phe Lys Val Asn Val Lys Val Pro Pro Val
              435             440                 445
Pro Leu Ala Ala Pro Arg Leu Leu Thr Lys Gln Ser Arg Gln Leu Val
   450             455                 460
Val Ser Pro Leu Val Ser Phe Ser Gly Asp Gly Pro Ile Ser Thr Val
   465             470                 475                 480
Arg Leu His Tyr Arg Pro Gln Asp Ser Thr Met Asp Trp Ser Thr Ile
              485             490                 495
Val Val Asp Pro Ser Glu Asn Val Thr Leu Met Asn Leu Arg Pro Lys
              500             505                 510
Thr Gly Tyr Ser Val Arg Val Gln Leu Ser Arg Pro Gly Glu Gly Gly
              515             520                 525
Glu Gly Ala Trp Gly Pro Pro Thr Leu Met Thr Thr Asp Cys Pro Glu
   530             535                 540
Pro Leu Leu Gln Pro Trp Leu Glu Gly Trp His Val Glu Gly Thr Asp
   545             550                 555                 560
```

106

Arg Leu Arg Val Ser Trp Ser Leu Pro Leu Val Pro Gly Pro Leu Val
                  565   570   575
Gly Asp Gly Phe Leu Leu Arg Leu Trp Asp Gly Thr Arg Gly Gln Glu
              580   585   590
Arg Arg Glu Asn Val Ser Ser Pro Gln Ala Arg Thr Ala Leu Leu Thr
          595   600   605
Gly Leu Thr Pro Gly Thr His Tyr Gln Leu Asp Val Gln Leu Tyr His
      610   615   620
Cys Thr Leu Leu Gly Pro Ala Ser Pro Pro Ala His Val Leu Leu Pro
625   630   635   640
Pro Ser Gly Pro Pro Ala Pro Arg His Leu His Ala Gln Ala Leu Ser
              645   650   655
Asp Ser Glu Ile Gln Leu Thr Trp Lys His Pro Glu Ala Leu Pro Gly
              660   665   670
Pro Ile Ser Lys Tyr Val Val Glu Val Gln Val Ala Gly Gly Ala Gly
          675   680   685
Asp Pro Leu Trp Ile Asp Val Asp Arg Pro Glu Glu Thr Ser Thr Ile
      690   695   700
Ile Arg Gly Leu Asn Ala Ser Thr Arg Tyr Leu Phe Arg Met Arg Ala
705   710   715   720
Ser Ile Gln Gly Leu Gly Asp Trp Ser Asn Thr Val Glu Glu Ser Thr
              725   730   735
Leu Gly Asn Gly Leu Gln Ala Glu Gly Pro Val Gln Glu Ser Arg Ala
          740   745   750
Ala Glu Glu Gly Leu Asp Gln Gln Leu Ile Leu Ala Val Val Gly Ser
          755   760   765
Val Ser Ala Thr Cys Leu Thr Ile Leu Ala Ala Leu Leu Thr Leu Val
      770   775   780
Cys Ile Arg Arg Ser Cys Leu His Arg Arg Arg Thr Phe Thr Tyr Gln
785   790   795   800
Ser Gly Ser Gly Glu Glu Thr Ile Leu Gln Phe Ser Ser Gly Thr Leu
              805   810   815
Thr Leu Thr Arg Arg Pro Lys Leu Gln Pro Glu Pro Leu Ser Tyr Pro
          820   825   830
Val Leu Glu Trp Glu Asp Ile Thr Phe Glu Asp Leu Ile Gly Glu Gly
          835   840   845
Asn Phe Gly Gln Val Ile Arg Ala Met Ile Lys Lys Asp Gly Leu Lys
      850   855   860
Met Asn Ala Ala Ile Lys Met Leu Lys Glu Tyr Ala Ser Glu Asn Asp
865   870   875   880
His Arg Asp Phe Ala Gly Glu Leu Glu Val Leu Cys Lys Leu Gly His
              885   890   895
His Pro Asn Ile Ile Asn Leu Leu Gly Ala Cys Lys Asn Arg Gly Tyr
          900   905   910
Leu Tyr Ile Ala Ile Glu Tyr Ala Pro Tyr Gly Asn Leu Leu Asp Phe
      915   920   925
Leu Arg Lys Ser Arg Val Leu Glu Thr Asp Pro Ala Phe Ala Arg Glu
      930   935   940
His Gly Thr Ala Ser Thr Leu Ser Ser Arg Gln Leu Leu Arg Phe Ala
945   950   955   960
Ser Asp Ala Ala Asn Gly Met Gln Tyr Leu Ser Glu Lys Gln Phe Ile
              965   970   975
His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Gly Glu Asn Leu Ala
          980   985   990
Ser Lys Ile Ala Asp Phe Gly Leu Ser Arg Gly Glu Glu Val Tyr Val
      995   1000   1005
Lys Lys Thr Met Gly Arg Leu Pro Val Arg Trp Met Ala Ile Glu Ser
      1010   1015   1020
Leu Asn Tyr Ser Val Tyr Thr Thr Lys Ser Asp Val Trp Ser Phe Gly
1025   1030   1035   1040

107

```
Val Leu Leu Trp Glu Ile Val Ser Leu Gly Gly Thr Pro Tyr Cys Gly
              1045              1050              1055
Met Thr Cys Ala Glu Leu Tyr Glu Lys Leu Pro Gln Gly Tyr Arg Met
              1060              1065              1070
Glu Gln Pro Arg Asn Cys Asp Asp Glu Val Tyr Glu Leu Met Arg Gln
         1075              1080              1085
Cys Trp Arg Asp Arg Pro Tyr Glu Arg Pro Pro Phe Ala Gln Ile Ala
      1090              1095              1100
Leu Gln Leu Gly Arg Met Leu Glu Ala Arg Lys Ala Tyr Val Asn Met
1105              1110              1115              1120
Ser Leu Phe Glu Asn Phe Thr Tyr Ala Gly Ile Asp Ala Thr Ala Glu
              1125              1130              1135
Glu Ala
```

```
        <400> 102
Met Pro Val Met Arg Leu Phe Pro Cys Phe Leu Gln Leu Leu Ala Gly
1               5               10              15
Leu Ala Leu Pro Ala Val Pro Pro Gln Gln Trp Ala Leu Ser Ala Gly
         20              25              30
Asn Gly Ser Ser Glu Val Glu Val Val Pro Phe Gln Glu Val Trp Gly
         35              40              45
Arg Ser Tyr Cys Arg Ala Leu Glu Arg Leu Val Asp Val Val Ser Glu
      50              55              60
Tyr Pro Ser Glu Val Glu His Met Phe Ser Pro Ser Cys Val Ser Leu
65              70              75              80
Leu Arg Cys Thr Gly Cys Cys Gly Asp Glu Asn Leu His Cys Val Pro
              85              90              95
Val Glu Thr Ala Asn Val Thr Met Gln Leu Leu Lys Ile Arg Ser Gly
         100             105             110
Asp Arg Pro Ser Tyr Val Glu Leu Thr Phe Ser Gln His Val Arg Cys
      115             120             125
Glu Cys Arg Pro Leu Arg Glu Lys Met Lys Pro Glu Arg Cys Gly Asp
      130             135             140
Ala Val Pro Arg Arg
145
```

```
        <400> 103
Met Glu Gly Asp Arg Val Ala Gly Arg Pro Val Leu Ser Ser Leu Pro
1               5               10              15
Val Leu Leu Leu Leu Gln Leu Leu Met Leu Arg Ala Ala Ala Leu His
         20              25              30
Pro Asp Glu Leu Phe Pro His Gly Glu Ser Trp Trp Asp Gln Leu Leu
         35              40              45
Gln Glu Gly Asp Asp Val Lys Leu Ser Arg Gly Glu Ala Gly Glu Ser
      50              55              60
Pro Ala Leu Leu Thr Lys Pro Asp Ser Ala Thr Ser Thr Trp Ala Pro
65              70              75              80
Thr Ala Ser Ser Pro Leu Arg Thr Ser Pro Gly Lys Arg Ser Met Trp
              85              90              95
```

108

```
Thr Met Ile Ser Pro Pro Thr Ser Arg Pro Ser Pro Leu Phe Trp Arg
        100                 105             110
Thr Ser Thr Arg Ala Thr Ala Glu Ala Glu Ser Cys Thr Glu Arg Thr
        115                 120             125
Pro Pro Pro Gln Cys Trp Ala Trp Pro Pro Ala Met Cys Ala Leu Ala
        130                 135             140
Ser Arg Ala Leu Arg Ala Phe Tyr Pro His Pro Arg Leu Pro Gly His
145                 150                 155                 160
Leu Gly Ala Gly Arg Arg Leu Arg Gly Gly Gln Thr Arg Ala Leu Pro
                165                 170                 175
Ser Gly Glu Leu Asn Thr Phe Gln Ala Val Leu Ala Ser Asp Gly Ser
                180                 185             190
Asp Ser Tyr Ala Leu Phe Leu Tyr Pro Ala Asn Gly Leu Gln Phe Leu
        195                 200                 205
Gly Thr Arg Pro Lys Glu Ser Tyr Asn Val Gln Leu Gln Leu Pro Ala
        210                 215                 220
Arg Val Gly Phe Cys Arg Gly Glu Ala Asp Asp Leu Lys Ser Glu Gly
225                 230                 235                 240
Pro Tyr Phe Ser Leu Thr Ser Thr Glu Gln Ser Val Lys Asn Leu Tyr
                245                 250                 255
Gln Leu Ser Asn Leu Gly Ile Pro Gly Val Trp Ala Phe His Ile Gly
                260                 265                 270
Ser Thr Ser Pro Leu Asp Asn Val Arg Pro Ala Ala Val Gly Asp Leu
        275                 280                 285
Ser Ala Ala His Ser Ser Val Pro Leu Gly Arg Ser Phe Ser His Ala
        290                 295                 300
Thr Ala Leu Glu Ser Asp Tyr Asn Glu Asp Asn Leu Asp Tyr Tyr Asp
305                 310                 315                 320
Val Asn Glu Glu Glu Ala Glu Tyr Leu Pro Gly Glu Pro Glu Glu Ala
                325                 330                 335
Leu Asn Gly His Ser Ser Ile Asp Val Ser Phe Gln Ser Lys Val Asp
                340                 345                 350
Thr Lys Pro Leu Glu Glu Ser Ser Thr Leu Asp Pro His Thr Lys Glu
        355                 360                 365
Gly Thr Ser Leu Gly Glu Val Gly Gly Pro Asp Leu Lys Gly Gln Val
        370                 375                 380
Glu Pro Trp Asp Glu Arg Glu Thr Arg Ser Pro Ala Pro Pro Glu Val
385                 390                 395                 400
Asp Arg Asp Ser Leu Ala Pro Ser Trp Glu Thr Pro Pro Pro Tyr Pro
                405                 410                 415
Glu Asn Gly Ser Ile Gln Pro Tyr Pro Asp Gly Gly Pro Val Pro Ser
                420                 425                 430
Glu Met Asp Val Pro Pro Ala His Pro Glu Glu Glu Ile Val Leu Arg
        435                 440                 445
Ser Tyr Pro Ala Ser Gly His Thr Thr Pro Leu Ser Arg Gly Thr Tyr
        450                 455                 460
Glu Val Gly Leu Glu Asp Asn Ile Gly Ser Asn Thr Glu Val Phe Thr
465                 470                 475                 480
Tyr Asn Ala Ala Asn Lys Glu Thr Cys Glu His Asn His Arg Gln Cys
                485                 490                 495
Ser Arg His Ala Phe Cys Thr Asp Tyr Ala Thr Gly Phe Cys Cys His
        500                 505                 510
Cys Gln Ser Lys Phe Tyr Gly Asn Gly Lys His Cys Leu Pro Glu Gly
        515                 520                 525
Ala Pro His Arg Val Asn Gly Lys Val Ser Gly His Leu His Val Gly
        530                 535                 540
His Thr Pro Val His Phe Thr Asp Val Asp Leu His Ala Tyr Ile Val
545                 550                 555                 560
Gly Asn Asp Gly Arg Ala Tyr Thr Ala Ile Ser His Ile Pro Gln Pro
                565                 570                 575
```

109

```
Ala Ala Gln Ala Leu Leu Pro Leu Thr Pro Ile Gly Gly Leu Phe Gly
            580                 585                 590
Trp Leu Phe Ala Leu Glu Lys Pro Gly Ser Glu Asn Gly Phe Ser Leu
            595                 600                 605
Ala Gly Ala Ala Phe Thr His Asp Met Glu Val Thr Phe Tyr Pro Gly
            610                 615                 620
Glu Glu Thr Val Arg Ile Thr Gln Thr Ala Glu Gly Leu Asp Pro Glu
625                     630                 635                 640
Asn Tyr Leu Ser Ile Lys Thr Asn Ile Gln Gly Gln Val Pro Tyr Val
            645                 650                 655
Pro Ala Asn Phe Thr Ala His Ile Ser Pro Tyr Lys Glu Leu Tyr His
            660                 665                 670
Tyr Ser Asp Ser Thr Val Thr Ser Thr Ser Ser Arg Asp Tyr Ser Leu
            675                 680                 685
Thr Phe Gly Ala Ile Asn Gln Thr Trp Ser Tyr Arg Ile His Gln Asn
            690                 695                 700
Ile Thr Tyr Gln Val Cys Arg His Ala Pro Arg His Pro Ser Phe Pro
705                     710                 715                 720
Thr Thr Gln Gln Leu Asn Val Asp Arg Val Phe Ala Leu Tyr Asn Asp
            725                 730                 735
Glu Glu Arg Val Leu Arg Phe Ala Val Thr Asn Gln Ile Gly Pro Val
            740                 745                 750
Lys Glu Asp Ser Asp Pro Thr Pro Val Asn Pro Cys Tyr Asp Gly Ser
            755                 760                 765
His Met Cys Asp Thr Thr Ala Arg Cys His Pro Gly Thr Gly Val Asp
            770                 775                 780
Tyr Thr Cys Glu Cys Ala Ser Gly Tyr Gln Gly Asp Gly Arg Asn Cys
785                     790                 795                 800
Val Asp Glu Asn Glu Cys Ala Thr Gly Phe His Arg Cys Gly Pro Asn
            805                 810                 815
Ser Val Cys Ile Asn Leu Pro Gly Ser Tyr Arg Cys Glu Cys Arg Ser
            820                 825                 830
Gly Tyr Glu Phe Ala Asp Asp Arg His Thr Cys Ile Leu Ile Thr Pro
            835                 840                 845
Pro Ala Asn Pro Cys Glu Asp Gly Ser His Thr Cys Ala Pro Ala Gly
            850                 855                 860
Gln Ala Arg Cys Val His His Gly Gly Ser Thr Phe Ser Cys Ala Cys
865                     870                 875                 880
Leu Pro Gly Tyr Ala Gly Asp Gly His Gln Cys Thr Asp Val Asp Glu
            885                 890                 895
Cys Ser Glu Asn Arg Cys His Pro Ala Ala Thr Cys Tyr Asn Thr Pro
            900                 905                 910
Gly Ser Phe Ser Cys Arg Cys Gln Pro Gly Tyr Tyr Gly Asp Gly Phe
            915                 920                 925
Gln Cys Ile Pro Asp Ser Thr Ser Ser Leu Thr Pro Cys Glu Gln Gln
            930                 935                 940
Gln Arg His Ala Gln Ala Gln Tyr Ala Tyr Pro Gly Ala Arg Phe His
945                     950                 955                 960
Ile Pro Gln Cys Asp Glu Gln Gly Asn Phe Leu Pro Leu Gln Cys His
            965                 970                 975
Gly Ser Thr Gly Phe Cys Trp Cys Val Asp Pro Asp Gly His Glu Val
            980                 985                 990
Pro Gly Thr Gln Thr Pro Pro Gly Ser Thr Pro Pro His Cys Gly Pro
            995                 1000                1005
Ser Pro Glu Pro Thr Gln Arg Pro Pro Thr Ile Cys Glu Arg Trp Arg
            1010                1015                1020
Glu Asn Leu Leu Glu His Tyr Gly Gly Thr Pro Arg Asp Asp Gln Tyr
1025                    1030                1035                1040
Val Pro Gln Cys Asp Asp Leu Gly His Phe Ile Pro Leu Gln Cys His
            1045                1050                1055
```

110

Gly Lys Ser Asp Phe Cys Trp Cys Val Asp Lys Asp Gly Arg Glu Val
          1060   1065   1070
Gln Gly Thr Arg Ser Gln Pro Gly Thr Thr Pro Ala Cys Ile Pro Thr
          1075   1080   1085
Val Ala Pro Pro Met Val Arg Pro Thr Pro Arg Pro Asp Val Thr Pro
     1090   1095   1100
Pro Ser Val Gly Thr Phe Leu Leu Tyr Thr Gln Gly Gln Gln Ile Gly
1105   1110   1115   1120
Tyr Leu Pro Leu Asn Gly Thr Arg Leu Gln Lys Asp Ala Ala Lys Thr
               1125   1130   1135
Leu Leu Ser Leu His Gly Ser Ile Ile Val Gly Ile Asp Tyr Asp Cys
          1140   1145   1150
Arg Glu Arg Met Val Tyr Trp Thr Asp Val Ala Gly Arg Thr Ile Ser
          1155   1160   1165
Arg Ala Gly Leu Glu Leu Gly Ala Glu Pro Glu Thr Ile Val Asn Ser
     1170   1175   1180
Gly Leu Ile Ser Pro Glu Gly Leu Ala Ile Asp His Ile Arg Arg Thr
1185   1190   1195   1200
Met Tyr Trp Thr Asp Ser Val Leu Asp Lys Ile Glu Ser Ala Leu Leu
          1205   1210   1215
Asp Gly Ser Glu Arg Lys Val Leu Phe Tyr Thr Asp Leu Val Asn Pro
          1220   1225   1230
Arg Ala Ile Ala Val Asp Pro Ile Arg Gly Asn Leu Tyr Trp Thr Asp
          1235   1240   1245
Trp Asn Arg Glu Ala Pro Lys Ile Glu Thr Ser Ser Leu Asp Gly Glu
     1250   1255   1260
Asn Arg Arg Ile Leu Ile Asn Thr Asp Ile Gly Leu Pro Asn Gly Leu
1265   1270   1275   1280
Thr Phe Asp Pro Phe Ser Lys Leu Leu Cys Trp Ala Asp Ala Gly Thr
               1285   1290   1295
Lys Lys Leu Glu Cys Thr Leu Pro Asp Gly Thr Gly Arg Arg Val Ile
          1300   1305   1310
Gln Asn Asn Leu Lys Tyr Pro Phe Ser Ile Val Ser Tyr Ala Asp His
     1315   1320   1325
Phe Tyr His Thr Asp Trp Arg Arg Asp Gly Val Val Ser Val Asn Lys
     1330   1335   1340
His Ser Gly Gln Phe Thr Asp Glu Tyr Leu Pro Glu Gln Arg Ser His
1345   1350   1355   1360
Leu Tyr Gly Ile Thr Ala Val Tyr Pro Tyr Cys Pro Thr Gly Arg Lys
          1365   1370   1375

          <210> 104
          <211> 493
          <212> PRT
          <213> Homo sapiens

          <400> 104
Met Thr Ala Asn Gly Thr Ala Glu Ala Val Gln Ile Gln Phe Gly Leu
 1   5   10   15
Ile Asn Cys Gly Asn Lys Tyr Leu Thr Ala Glu Ala Phe Gly Phe Lys
          20   25   30
Val Asn Ala Ser Ala Ser Ser Leu Lys Lys Lys Gln Ile Trp Thr Leu
     35   40   45
Glu Gln Pro Pro Asp Glu Ala Gly Ser Ala Ala Val Cys Leu Arg Ser
     50   55   60
His Leu Gly Arg Tyr Leu Ala Ala Asp Lys Asp Gly Asn Val Thr Cys
65   70   75   80
Glu Arg Glu Val Pro Gly Pro Asp Cys Arg Phe Leu Ile Val Ala His
               85   90   95
Asp Asp Gly Arg Trp Ser Leu Gln Ser Glu Ala His Arg Arg Tyr Phe
          100   105   110

111

```
Gly Gly Thr Glu Asp Arg Leu Ser Cys Phe Ala Gln Thr Val Ser Pro
        115                 120                 125
Ala Glu Lys Trp Ser Val His Ile Ala Met His Pro Gln Val Asn Ile
        130                 135                 140
Tyr Ser Val Thr Arg Lys Arg Tyr Ala His Leu Ser Ala Arg Pro Ala
145                 150                 155                 160
Asp Glu Ile Ala Val Asp Arg Asp Val Pro Trp Gly Val Asp Ser Leu
                165                 170                 175
Ile Thr Leu Ala Phe Gln Asp Gln Arg Tyr Ser Val Gln Thr Ala Asp
                180                 185                 190
His Arg Phe Leu Arg His Asp Gly Arg Leu Val Ala Arg Pro Glu Pro
        195                 200                 205
Ala Thr Gly Tyr Thr Leu Glu Phe Arg Ser Gly Lys Val Ala Phe Arg
        210                 215                 220
Asp Cys Glu Gly Arg Tyr Leu Ala Pro Ser Gly Pro Ser Gly Thr Leu
225                 230                 235                 240
Lys Ala Gly Lys Ala Thr Lys Val Gly Lys Asp Glu Leu Phe Ala Leu
                245                 250                 255
Glu Gln Ser Cys Ala Gln Val Val Leu Gln Ala Ala Asn Glu Arg Asn
        260                 265                 270
Val Ser Thr Arg Gln Gly Met Asp Leu Ser Ala Asn Gln Asp Glu Glu
        275                 280                 285
Thr Asp Gln Glu Thr Phe Gln Leu Glu Ile Asp Arg Asp Thr Lys Lys
        290                 295                 300
Cys Ala Phe Arg Thr His Thr Gly Lys Tyr Trp Thr Leu Thr Ala Thr
305                 310                 315                 320
Gly Gly Val Gln Ser Thr Ala Ser Ser Lys Asn Ala Ser Cys Tyr Phe
                325                 330                 335
Asp Ile Glu Trp Arg Asp Arg Arg Ile Thr Leu Arg Ala Ser Asn Gly
        340                 345                 350
Lys Phe Val Thr Ser Lys Lys Asn Gly Gln Leu Ala Ala Ser Val Glu
        355                 360                 365
Thr Ala Gly Asp Ser Glu Leu Phe Leu Met Lys Leu Ile Asn Arg Pro
        370                 375                 380
Ile Ile Val Phe Arg Gly Glu His Gly Phe Ile Gly Cys Arg Lys Val
385                 390                 395                 400
Thr Gly Thr Leu Asp Ala Asn Arg Ser Ser Tyr Asp Val Phe Gln Leu
                405                 410                 415
Glu Phe Asn Asp Gly Ala Tyr Asn Ile Lys Asp Ser Thr Gly Lys Tyr
        420                 425                 430
Trp Thr Val Gly Ser Asp Ser Ala Val Thr Ser Ser Gly Asp Thr Pro
        435                 440                 445
Val Asp Phe Phe Phe Glu Phe Cys Asp Tyr Asn Lys Val Ala Ile Lys
450                 455                 460
Val Gly Gly Arg Tyr Leu Lys Gly Asp His Ala Gly Val Leu Lys Ala
465                 470                 475                 480
Ser Ala Glu Thr Val Asp Pro Ala Ser Leu Trp Glu Tyr
                485                 490

        <210> 105
        <211> 238
        <212> PRT
        <213> Homo sapiens

        <400> 105
Met Leu Thr Thr Leu Leu Pro Ile Leu Leu Leu Ser Gly Trp Ala Phe
 1               5                   10                  15
Cys Ser Gln Asp Ala Ser Asp Gly Leu Gln Arg Leu His Met Leu Gln
        20                  25                  30
Ile Ser Tyr Phe Arg Asp Pro Tyr His Val Trp Tyr Gln Gly Asn Ala
        35                  40                  45
```

112

```
Ser Leu Gly Gly His Leu Thr His Val Leu Glu Gly Pro Asp Thr Asn
    50                  55                  60
Thr Thr Ile Ile Gln Leu Gln Pro Leu Gln Glu Pro Glu Ser Trp Ala
65                  70                  75                  80
Arg Thr Gln Ser Gly Leu Gln Ser Tyr Leu Leu Gln Phe His Gly Leu
                85                  90                  95
Val Arg Leu Val His Gln Glu Arg Thr Leu Ala Phe Pro Leu Thr Ile
                100                 105                 110
Arg Cys Phe Leu Gly Cys Glu Leu Pro Pro Glu Gly Ser Arg Ala His
        115                 120                 125
Val Phe Phe Glu Val Ala Val Asn Gly Ser Ser Phe Val Ser Phe Arg
    130                 135                 140
Pro Glu Arg Ala Leu Trp Gln Ala Asp Thr Gln Val Thr Ser Gly Val
145                 150                 155                 160
Val Thr Phe Thr Leu Gln Gln Leu Asn Ala Tyr Asn Arg Thr Arg Tyr
                165                 170                 175
Glu Leu Arg Glu Phe Leu Glu Asp Thr Cys Val Gln Tyr Val Gln Lys
        180                 185                 190
His Ile Ser Ala Glu Asn Thr Lys Gly Ser Gln Thr Ser Arg Ser Tyr
        195                 200                 205
Thr Ser Leu Val Leu Gly Val Leu Val Gly Gly Phe Ile Ile Ala Gly
    210                 215                 220
Val Ala Val Gly Ile Phe Leu Cys Thr Gly Gly Arg Arg Cys
225                 230                 235

        <210> 106
        <211> 646
        <212> PRT
        <213> Homo sapiens

        <400> 106
Met Gly Leu Pro Arg Leu Val Cys Ala Phe Leu Leu Ala Ala Cys Cys
1               5                   10                  15
Cys Cys Pro Arg Val Ala Gly Val Pro Gly Glu Ala Glu Gln Pro Ala
            20                  25                  30
Pro Glu Leu Val Glu Val Glu Val Gly Ser Thr Ala Leu Leu Lys Cys
        35                  40                  45
Gly Leu Ser Gln Ser Gln Gly Asn Leu Ser His Val Asp Trp Phe Ser
    50                  55                  60
Val His Lys Glu Lys Arg Thr Leu Ile Phe Arg Val Arg Gln Gly Gln
65                  70                  75                  80
Gly Gln Ser Glu Pro Gly Glu Tyr Glu Gln Arg Leu Ser Leu Gln Asp
                85                  90                  95
Arg Gly Ala Thr Leu Ala Leu Thr Gln Val Thr Pro Gln Asp Glu Arg
                100                 105                 110
Ile Phe Leu Cys Gln Gly Lys Arg Pro Arg Ser Gln Glu Tyr Arg Ile
        115                 120                 125
Gln Leu Arg Val Tyr Lys Ala Pro Glu Glu Pro Asn Ile Gln Val Asn
    130                 135                 140
Pro Leu Gly Ile Pro Val Asn Ser Lys Glu Pro Glu Glu Val Ala Thr
145                 150                 155                 160
Cys Val Gly Arg Asn Gly Tyr Pro Ile Pro Gln Val Ile Trp Tyr Lys
                165                 170                 175
Asn Gly Arg Pro Leu Lys Glu Glu Lys Asn Arg Val His Ile Gln Ser
                180                 185                 190
Ser Gln Thr Val Glu Ser Ser Gly Leu Tyr Thr Leu Gln Ser Ile Leu
        195                 200                 205
Lys Ala Gln Leu Val Lys Glu Asp Lys Asp Ala Gln Phe Tyr Cys Glu
    210                 215                 220
Leu Asn Tyr Arg Leu Pro Ser Gly Asn His Met Lys Glu Ser Arg Glu
225                 230                 235                 240
```

113

```
Val Thr Val Pro Val Phe Tyr Pro Thr Glu Lys Val Trp Leu Glu Val
                245                 250                 255
Glu Pro Val Gly Met Leu Lys Glu Gly Asp Arg Val Glu Ile Arg Cys
                260                 265                 270
Leu Ala Asp Gly Asn Pro Pro His Phe Ser Ile Ser Lys Gln Asn
                275                 280                 285
Pro Ser Thr Arg Glu Ala Glu Glu Glu Thr Thr Asn Asp Asn Gly Val
    290                 295                 300
Leu Val Leu Glu Pro Ala Arg Lys Glu His Ser Gly Arg Tyr Glu Cys
305                 310                 315                 320
Gln Ala Trp Asn Leu Asp Thr Met Ile Ser Leu Leu Ser Glu Pro Gln
                325                 330                 335
Glu Leu Leu Val Asn Tyr Val Ser Asp Val Arg Val Ser Pro Ala Ala
                340                 345                 350
Pro Glu Arg Gln Glu Gly Ser Ser Leu Thr Leu Thr Cys Glu Ala Glu
        355                 360                 365
Ser Ser Gln Asp Leu Glu Phe Gln Trp Leu Arg Glu Glu Thr Asp Gln
    370                 375                 380
Val Leu Glu Arg Gly Pro Val Leu Gln Leu His Asp Leu Lys Arg Glu
385                 390                 395                 400
Ala Gly Gly Gly Tyr Arg Cys Val Ala Ser Val Pro Ser Ile Pro Gly
                405                 410                 415
Leu Asn Arg Thr Gln Leu Val Lys Leu Ala Ile Phe Gly Pro Pro Trp
            420                 425                 430
Met Ala Phe Lys Glu Arg Lys Val Trp Val Lys Glu Asn Met Val Leu
            435                 440                 445
Asn Leu Ser Cys Glu Ala Ser Gly His Pro Arg Pro Thr Ile Ser Trp
    450                 455                 460
Asn Val Asn Gly Thr Ala Ser Glu Gln Asp Gln Asp Pro Gln Arg Val
465                 470                 475                 480
Leu Ser Thr Leu Asn Val Leu Val Thr Pro Glu Leu Leu Glu Thr Gly
            485                 490                 495
Val Glu Cys Thr Ala Ser Asn Asp Leu Gly Lys Asn Thr Ser Ile Leu
            500                 505                 510
Phe Leu Glu Leu Val Asn Leu Thr Thr Leu Thr Pro Asp Ser Asn Thr
        515                 520                 525
Thr Thr Gly Leu Ser Thr Ser Thr Ala Ser Pro His Thr Arg Ala Asn
    530                 535                 540
Ser Thr Ser Thr Glu Arg Lys Leu Pro Glu Pro Glu Ser Arg Gly Val
545                 550                 555                 560
Val Ile Val Ala Val Ile Val Cys Ile Leu Val Leu Ala Val Leu Gly
                565                 570                 575
Ala Val Leu Tyr Phe Leu Tyr Lys Lys Gly Lys Leu Pro Cys Arg Arg
            580                 585                 590
Ser Gly Lys Gln Glu Ile Thr Leu Pro Pro Ser Arg Lys Thr Glu Leu
        595                 600                 605
Val Val Glu Val Lys Ser Asp Lys Leu Pro Glu Glu Met Gly Leu Leu
    610                 615                 620
Gln Gly Ser Ser Gly Asp Lys Arg Ala Pro Gly Asp Gln Gly Glu Lys
625                 630                 635                 640
Tyr Ile Asp Leu Arg His
                645


        <210> 107
        <211> 212
        <212> PRT
        <213> Homo sapiens

        <400> 107
Met Asp Tyr Leu Leu Met Ile Phe Ser Leu Leu Phe Val Ala Cys Gln
    1               5                   10                  15
```

114

Gly Ala Pro Glu Thr Ala Val Leu Gly Ala Glu Leu Ser Ala Val Gly
            20   25   30
Glu Asn Gly Gly Glu Lys Pro Thr Pro Ser Pro Pro Trp Arg Leu Arg
        35   40   45
Arg Ser Lys Arg Cys Ser Cys Ser Ser Leu Met Asp Lys Glu Cys Val
    50   55   60
Tyr Phe Cys His Leu Asp Ile Ile Trp Val Asn Thr Pro Glu His Val
65   70   75   80
Val Pro Tyr Gly Leu Gly Ser Pro Arg Ser Lys Arg Ala Leu Glu Asn
                85   90   95
Leu Leu Pro Thr Lys Ala Thr Asp Arg Glu Asn Arg Cys Gln Cys Ala
            100   105   110
Ser Gln Lys Asp Lys Lys Cys Trp Asn Phe Cys Gln Ala Gly Lys Glu
            115   120   125
Leu Arg Ala Glu Asp Ile Met Glu Lys Asp Trp Asn Asn His Lys Lys
            130   135   140
Gly Lys Asp Cys Ser Lys Leu Gly Lys Lys Cys Ile Tyr Gln Gln Leu
145   150   155   160
Val Arg Gly Arg Lys Ile Arg Arg Ser Ser Glu Glu His Leu Arg Gln
                165   170   175
Thr Arg Ser Glu Thr Met Arg Asn Ser Val Lys Ser Ser Phe His Asp
            180   185   190
Pro Lys Leu Lys Gly Lys Pro Ser Arg Glu Arg Tyr Val Thr His Asn
            195   200   205
Arg Ala His Trp
        210

        <210> 108
        <211> 675
        <212> PRT
        <213> Homo sapiens

        <400> 108
Met Asp Thr Lys Ser Ile Leu Glu Glu Leu Leu Leu Lys Arg Ser Gln
1   5   10   15
Gln Lys Lys Lys Met Ser Pro Asn Asn Tyr Lys Glu Arg Leu Phe Val
            20   25   30
Leu Thr Lys Thr Asn Leu Ser Tyr Tyr Glu Tyr Asp Lys Met Lys Arg
        35   40   45
Gly Ser Arg Lys Gly Ser Ile Glu Ile Lys Lys Ile Arg Cys Val Glu
    50   55   60
Lys Val Asn Leu Glu Glu Gln Thr Pro Val Glu Arg Gln Tyr Pro Phe
65   70   75   80
Gln Ile Val Tyr Lys Asp Gly Leu Leu Tyr Val Tyr Ala Ser Asn Glu
                85   90   95
Glu Ser Arg Ser Gln Trp Leu Lys Ala Leu Gln Lys Glu Ile Arg Gly
            100   105   110
Asn Pro His Leu Leu Val Lys Tyr His Ser Gly Phe Phe Val Asp Gly
            115   120   125
Lys Phe Leu Cys Cys Gln Gln Ser Cys Lys Ala Ala Pro Gly Cys Thr
            130   135   140
Leu Trp Glu Ala Tyr Ala Asn Leu His Thr Ala Val Asn Glu Glu Lys
145   150   155   160
His Arg Val Pro Thr Phe Pro Asp Arg Val Leu Lys Ile Pro Arg Ala
                165   170   175
Val Pro Val Leu Lys Met Asp Ala Pro Ser Ser Ser Thr Thr Leu Ala
            180   185   190
Gln Tyr Asp Asn Glu Ser Lys Lys Asn Tyr Gly Ser Gln Pro Pro Ser
            195   200   205
Ser Ser Thr Ser Leu Ala Gln Tyr Asp Ser Asn Ser Lys Lys Ile Tyr
    210   215   220

115

```
Gly Ser Gln Pro Asn Phe Asn Met Gln Tyr Ile Pro Arg Glu Asp Phe
225             230             235             240
Pro Asp Trp Trp Gln Val Arg Lys Leu Lys Ser Ser Ser Ser Ser Glu
            245             250             255
Asp Val Ala Ser Ser Asn Gln Lys Glu Arg Asn Val Asn His Thr Thr
            260             265             270
Ser Lys Ile Ser Trp Glu Phe Pro Glu Ser Ser Ser Ser Glu Glu Glu
        275             280             285
Glu Asn Leu Asp Asp Tyr Asp Trp Phe Ala Gly Asn Ile Ser Arg Ser
    290             295             300
Gln Ser Glu Gln Leu Leu Arg Gln Lys Gly Lys Glu Gly Ala Phe Met
305             310             315             320
Val Arg Asn Ser Ser Gln Val Gly Met Tyr Thr Val Ser Leu Phe Ser
            325             330             335
Lys Ala Val Asn Asp Lys Lys Gly Thr Val Lys His Tyr His Val His
            340             345             350
Thr Asn Ala Glu Asn Lys Leu Tyr Leu Ala Glu Asn Tyr Cys Phe Asp
            355             360             365
Ser Ile Pro Lys Leu Ile His Tyr His Gln His Asn Ser Ala Gly Met
    370             375             380
Ile Thr Arg Leu Arg His Pro Val Ser Thr Lys Ala Asn Lys Val Pro
385             390             395             400
Asp Ser Val Ser Leu Gly Asn Gly Ile Trp Glu Leu Lys Arg Glu Glu
            405             410             415
Ile Thr Leu Leu Lys Glu Leu Gly Ser Gly Gln Phe Gly Val Val Gln
            420             425             430
Leu Gly Lys Trp Lys Gly Gln Tyr Asp Val Ala Val Lys Met Ile Lys
            435             440             445
Glu Gly Ser Met Ser Glu Asp Glu Phe Phe Gln Glu Ala Gln Thr Met
    450             455             460
Met Lys Leu Ser His Pro Lys Leu Val Lys Phe Tyr Gly Val Cys Ser
465             470             475             480
Lys Glu Tyr Pro Ile Tyr Ile Val Thr Glu Tyr Ile Ser Asn Gly Cys
            485             490             495
Leu Leu Asn Tyr Leu Arg Ser His Gly Lys Gly Leu Glu Pro Ser Gln
            500             505             510
Leu Leu Glu Met Cys Tyr Asp Val Cys Glu Gly Met Ala Phe Leu Glu
    515             520             525
Ser His Gln Phe Ile His Arg Asp Leu Ala Ala Arg Asn Cys Leu Val
    530             535             540
Asp Arg Asp Leu Cys Val Lys Val Ser Asp Phe Gly Met Thr Arg Tyr
545             550             555             560
Val Leu Asp Asp Gln Tyr Val Ser Ser Val Gly Thr Lys Phe Pro Val
            565             570             575
Lys Trp Ser Ala Pro Glu Val Phe His Tyr Phe Lys Tyr Ser Ser Lys
            580             585             590
Ser Asp Val Trp Ala Phe Gly Ile Leu Met Trp Glu Val Phe Ser Leu
            595             600             605
Gly Lys Gln Pro Tyr Asp Leu Tyr Asp Asn Ser Gln Val Val Leu Lys
    610             615             620
Val Ser Gln Gly His Arg Leu Tyr Arg Pro His Leu Ala Ser Asp Thr
625             630             635             640
Ile Tyr Gln Ile Met Tyr Ser Cys Trp His Glu Leu Pro Glu Lys Arg
            645             650             655
Pro Thr Phe Gln Gln Leu Leu Ser Ser Ile Glu Pro Leu Arg Glu Lys
            660             665             670
Asp Lys His
    675
```

116

<210> 109
<211> 604
<212> PRT
<213> Homo sapiens

<400> 109

```
Met Leu Ala Arg Ala Leu Leu Leu Cys Ala Val Leu Ala Leu Ser His
1               5                   10                  15
Thr Ala Asn Pro Cys Cys Ser His Pro Cys Gln Asn Arg Gly Val Cys
            20                  25                  30
Met Ser Val Gly Phe Asp Gln Tyr Lys Cys Asp Cys Thr Arg Thr Gly
        35                  40                  45
Phe Tyr Gly Glu Asn Cys Ser Thr Pro Glu Phe Leu Thr Arg Ile Lys
    50                  55                  60
Leu Phe Leu Lys Pro Thr Pro Asn Thr Val His Tyr Ile Leu Thr His
65                  70                  75                  80
Phe Lys Gly Phe Trp Asn Val Val Asn Asn Ile Pro Phe Leu Arg Asn
                85                  90                  95
Ala Ile Met Ser Tyr Val Leu Thr Ser Arg Ser His Leu Ile Asp Ser
            100                 105                 110
Pro Pro Thr Tyr Asn Ala Asp Tyr Gly Tyr Lys Ser Trp Glu Ala Phe
            115                 120                 125
Ser Asn Leu Ser Tyr Tyr Thr Arg Ala Leu Pro Pro Val Pro Asp Asp
    130                 135                 140
Cys Pro Thr Pro Leu Gly Val Lys Gly Lys Lys Gln Leu Pro Asp Ser
145                 150                 155                 160
Asn Glu Ile Val Glu Lys Leu Leu Leu Arg Arg Lys Phe Ile Pro Asp
                165                 170                 175
Pro Gln Gly Ser Asn Met Met Phe Ala Phe Phe Ala Gln His Phe Thr
            180                 185                 190
His Gln Phe Phe Lys Thr Asp His Lys Arg Gly Pro Ala Phe Thr Asn
    195                 200                 205
Gly Leu Gly His Gly Val Asp Leu Asn His Ile Tyr Gly Glu Thr Leu
    210                 215                 220
Ala Arg Gln Arg Lys Leu Arg Leu Phe Lys Asp Gly Lys Met Lys Tyr
225                 230                 235                 240
Gln Ile Ile Asp Gly Glu Met Tyr Pro Pro Thr Val Lys Asp Thr Gln
                245                 250                 255
Ala Glu Met Ile Tyr Pro Pro Gln Val Pro Glu His Leu Arg Phe Ala
            260                 265                 270
Val Gly Gln Glu Val Phe Gly Leu Val Pro Gly Leu Met Met Tyr Ala
    275                 280                 285
Thr Ile Trp Leu Arg Glu His Asn Arg Val Cys Asp Val Leu Lys Gln
    290                 295                 300
Glu His Pro Glu Trp Gly Asp Glu Gln Leu Phe Gln Thr Ser Arg Leu
305                 310                 315                 320
Ile Leu Ile Gly Glu Thr Ile Lys Ile Val Ile Glu Asp Tyr Val Gln
                325                 330                 335
His Leu Ser Gly Tyr His Phe Lys Leu Lys Phe Asp Pro Glu Leu Leu
            340                 345                 350
Phe Asn Lys Gln Phe Gln Tyr Gln Asn Arg Ile Ala Ala Glu Phe Asn
    355                 360                 365
Thr Leu Tyr His Trp His Pro Leu Leu Pro Asp Thr Phe Gln Ile His
    370                 375                 380
Asp Gln Lys Tyr Asn Tyr Gln Gln Phe Ile Tyr Asn Asn Ser Ile Leu
385                 390                 395                 400
Leu Glu His Gly Ile Thr Gln Phe Val Glu Ser Phe Thr Arg Gln Ile
            405                 410                 415
Ala Gly Arg Val Ala Gly Gly Arg Asn Val Pro Pro Ala Val Gln Lys
            420                 425                 430
```

117

Val Ser Gln Ala Ser Ile Asp Gln Ser Arg Gln Met Lys Tyr Gln Ser
        435   440   445
Phe Asn Glu Tyr Arg Lys Arg Phe Met Leu Lys Pro Tyr Glu Ser Phe
        450   455   460
Glu Glu Leu Thr Gly Glu Lys Glu Met Ser Ala Glu Leu Glu Ala Leu
465   470   475   480
Tyr Gly Asp Ile Asp Ala Val Glu Leu Tyr Pro Ala Leu Leu Val Glu
                485   490   495
Lys Pro Arg Pro Asp Ala Ile Phe Gly Glu Thr Met Val Glu Val Gly
                500   505   510
Ala Pro Phe Ser Leu ·Lys Gly Leu Met Gly Asn Val Ile Cys Ser Pro
        515   520   525
Ala Tyr Trp Lys Pro Ser Thr Phe Gly Gly Glu Val Gly Phe Gln Ile
        530   535   540
Ile Asn Thr Ala Ser Ile Gln Ser Leu Ile Cys Asn Asn Val Lys Gly
545   550   555   560
Cys Pro Phe Thr Ser Phe Ser Val Pro Asp Pro Glu Leu Ile Lys Thr
                565   570   575
Val Thr Ile Asn Ala Ser Ser Ser Arg Ser Gly Leu Asp Asp Ile Asn
                580   585   590
Pro Thr Val Leu Leu Lys Glu Arg Ser Thr Glu Leu
        595   600

        <210> 110
        <211> 715
        <212> PRT
        <213> Homo sapiens

        <400> 110
Met Val Gln Lys Tyr Gln Ser Pro Val Arg Val Tyr Lys Tyr Pro Phe
1   5   10   15
Glu Leu Ile Met Ala Ala Tyr Glu Arg Arg Phe Pro Thr Cys Pro Leu
                20   25   30
Ile Pro Met Phe Val Gly Ser Asp Thr Val Ser Glu Phe Lys Ser Glu
        35   40   45
Asp Gly Ala Ile His Val Ile Glu Arg Arg Cys Lys Leu Asp Val Asp
        50   55   60
Ala Pro Arg Leu Leu Lys Lys Ile Ala Gly Val Asp Tyr Val Tyr Phe
65   70   75   80
Val Gln Lys Asn Ser Leu Asn Ser Arg Glu Arg Thr Leu His Ile Glu
                85   90   95
Ala Tyr Asn Glu Thr Phe Ser Asn Arg Val Ile Ile Asn Glu His Cys
                100   105   110
Cys Tyr Thr Val His Pro Glu Asn Glu Asp Trp Thr Cys Phe Glu Gln
        115   120   125
Ser Ala Ser Leu Asp Ile Lys Ser Phe Phe Gly Phe Glu Ser Thr Val
        130   135   140
Glu Lys Ile Ala Met Lys Gln Tyr Thr Ser Asn Ile Lys Lys Gly Lys
145   150   155   160
Glu Ile Ile Glu Tyr Tyr Leu Arg Gln Leu Glu Glu Glu Gly Ile Thr
                165   170   175
Phe Val Pro Arg Trp Ser Pro Pro Ser Ile Thr Pro Ser Ser Glu Thr
                180   185   190
Ser Ser Ser Ser Ser Lys Lys Gln Ala Ala Ser Met Ala Val Val Ile
        195   200   205
Pro Glu Ala Ala Leu Lys Glu Gly Leu Ser Gly Asp Ala Leu Ser Ser
        210   215   220
Pro Ser Ala Pro Glu Pro Val Val Gly Thr Pro Asp Asp Lys Leu Asp
225   230   235   240
Ala Asp His Ile Lys Arg Tyr Leu Gly Asp Leu Thr Pro Leu Gln Glu
                245   250   255

118

Ser Cys Leu Ile Arg Leu Arg Gln Trp Leu Gln Glu Thr His Lys Gly
            260   265   270
Lys Ile Pro Lys Asp Glu His Ile Leu Arg Phe Leu Arg Ala Arg Asp
            275   280   285
Phe Asn Ile Asp Lys Ala Arg Glu Ile Met Cys Gln Ser Leu Thr Trp
            290   295   300
Arg Lys Gln His Gln Val Asp Tyr Ile Leu Glu Thr Trp Thr Pro Pro
305   310   315   320
Gln Val Leu Gln Asp Tyr Tyr Ala Gly Gly Trp His His His Asp Lys
                325   330   335
Asp Gly Arg Pro Leu Tyr Val Leu Arg Leu Gly Gln Met Asp Thr Lys
            340   345   350
Gly Leu Val Arg Ala Leu Gly Glu Glu Ala Leu Leu Arg Tyr Val Leu
            355   360   365
Ser Val Asn Glu Glu Arg Leu Arg Arg Cys Glu Glu Asn Thr Lys Val
            370   375   380
Phe Gly Arg Pro Ile Ser Ser Trp Thr Cys Leu Val Asp Leu Glu Gly
385   390   395   400
Leu Asn Met Arg His Leu Trp Arg Pro Gly Val Lys Ala Leu Leu Arg
            405   410   415
Ile Ile Glu Val Val Glu Ala Asn Tyr Pro Glu Thr Leu Gly Arg Leu
            420   425   430
Leu Ile Leu Arg Ala Pro Arg Val Phe Pro Val Leu Trp Thr Leu Val
            435   440   445
Ser Pro Phe Ile Asp Asp Asn Thr Arg Arg Lys Phe Leu Ile Tyr Ala
            450   455   460
Gly Asn Asp Tyr Gln Gly Pro Gly Gly Leu Leu Asp Tyr Ile Asp Lys
465   470   475   480
Glu Ile Ile Pro Asp Phe Leu Ser Gly Glu Cys Met Cys Glu Val Pro
                485   490   495
Glu Gly Gly Leu Val Pro Lys Ser Leu Tyr Arg Thr Ala Glu Glu Leu
            500   505   510
Glu Asn Glu Asp Leu Lys Leu Trp Thr Glu Thr Ile Tyr Gln Ser Ala
            515   520   525
Ser Val Phe Lys Gly Ala Pro His Glu Ile Leu Ile Gln Ile Val Asp
            530   535   540
Ala Ser Ser Val Ile Thr Trp Asp Phe Asp Val Cys Lys Gly Asp Ile
545   550   555   560
Val Phe Asn Ile Tyr His Ser Lys Arg Ser Pro Gln Pro Pro Lys Lys
                565   570   575
Asp Ser Leu Gly Ala His Ser Ile Thr Ser Pro Gly Gly Asn Asn Val
            580   585   590
Gln Leu Ile Asp Lys Val Trp Gln Leu Gly Arg Asp Tyr Ser Met Val
            595   600   605
Glu Ser Pro Leu Ile Cys Lys Glu Gly Glu Ser Val Gln Gly Ser His
            610   615   620
Val Thr Arg Trp Pro Gly Phe Tyr Ile Leu Gln Trp Lys Phe His Ser
625   630   635   640
Met Pro Ala Cys Ala Ala Ser Ser Leu Pro Arg Val Asp Asp Val Leu
                645   650   655
Ala Ser Leu Gln Val Ser Ser His Lys Cys Lys Val Met Tyr Tyr Thr
                660   665   670
Glu Val Ile Gly Ser Glu Asp Phe Arg Gly Ser Met Thr Ser Leu Glu
            675   680   685
Ser Ser His Ser Gly Phe Ser Gln Leu Ser Ala Ala Thr Thr Ser Ser
            690   695   700
Ser Gln Ser His Ser Ser Ser Met Ile Ser Arg
705   710   715

119

<210> 111
<211> 532
<212> PRT
<213> Homo sapiens

<400> 111

```
Met Ala Pro Ser Ser Pro Arg Pro Ala Leu Pro Ala Leu Leu Val Leu
1               5                   10                  15
Leu Gly Ala Leu Phe Pro Gly Pro Gly Asn Ala Gln Thr Ser Val Ser
            20                  25                  30
Pro Ser Lys Val Ile Leu Pro Arg Gly Gly Ser Val Leu Val Thr Cys
        35                  40                  45
Ser Thr Ser Cys Asp Gln Pro Lys Leu Leu Gly Ile Glu Thr Pro Leu
    50                  55                  60
Pro Lys Lys Glu Leu Leu Leu Pro Gly Asn Asn Arg Lys Val Tyr Glu
65                  70                  75                  80
Leu Ser Asn Val Gln Glu Asp Ser Gln Pro Met Cys Tyr Ser Asn Cys
                85                  90                  95
Pro Asp Gly Gln Ser Thr Ala Lys Thr Phe Leu Thr Val Tyr Trp Thr
            100                 105                 110
Pro Glu Arg Val Glu Leu Ala Pro Leu Pro Ser Trp Gln Pro Val Gly
        115                 120                 125
Lys Asn Leu Thr Leu Arg Cys Gln Val Glu Gly Gly Ala Pro Arg Ala
        130                 135                 140
Asn Leu Thr Val Val Leu Leu Arg Gly Glu Lys Glu Leu Lys Arg Glu
145                 150                 155                 160
Pro Ala Val Gly Glu Pro Ala Glu Val Thr Thr Thr Val Leu Val Arg
                165                 170                 175
Arg Asp His His Gly Ala Asn Phe Ser Cys Arg Thr Glu Leu Asp Leu
                180                 185                 190
Arg Pro Gln Gly Leu Glu Leu Phe Glu Asn Thr Ser Ala Pro Tyr Gln
        195                 200                 205
Leu Gln Thr Phe Val Leu Pro Ala Thr Pro Pro Gln Leu Val Ser Pro
    210                 215                 220
Arg Val Leu Glu Val Asp Thr Gln Gly Thr Val Val Cys Ser Leu Asp
225                 230                 235                 240
Gly Leu Phe Pro Val Ser Glu Ala Gln Val His Leu Ala Leu Gly Asp
            245                 250                 255
Gln Arg Leu Asn Pro Thr Val Thr Tyr Gly Asn Asp Ser Phe Ser Ala
            260                 265                 270
Lys Ala Ser Val Ser Val Thr Ala Glu Asp Glu Gly Thr Gln Arg Leu
        275                 280                 285
Thr Cys Ala Val Ile Leu Gly Asn Gln Ser Gln Glu Thr Leu Gln Thr
    290                 295                 300
Val Thr Ile Tyr Ser Phe Pro Ala Pro Asn Val Ile Leu Thr Lys Pro
305                 310                 315                 320
Glu Val Ser Glu Gly Thr Glu Val Thr Val Lys Cys Glu Ala His Pro
            325                 330                 335
Arg Ala Lys Val Thr Leu Asn Gly Val Pro Ala Gln Pro Leu Gly Pro
            340                 345                 350
Arg Ala Gln Leu Leu Leu Lys Ala Thr Pro Glu Asp Asn Gly Arg Ser
        355                 360                 365
Phe Ser Cys Ser Ala Thr Leu Glu Val Ala Gly Gln Leu Ile His Lys
    370                 375                 380
Asn Gln Thr Arg Glu Leu Arg Val Leu Tyr Gly Pro Arg Leu Asp Glu
385                 390                 395                 400
Arg Asp Cys Pro Gly Asn Trp Thr Trp Pro Glu Asn Ser Gln Gln Thr
            405                 410                 415
Pro Met Cys Gln Ala Trp Gly Asn Pro Leu Pro Glu Leu Lys Cys Leu
            420                 425                 430
```

120

```
Lys Asp Gly Thr Phe Pro Leu Pro Ile Gly Glu Ser Val Thr Val Thr
        435                 440                 445
Arg Asp Leu Glu Gly Thr Tyr Leu Cys Arg Ala Arg Ser Thr Gln Gly
        450                 455                 460
Glu Val Thr Arg Glu Val Thr Val Asn Val Leu Ser Pro Arg Tyr Glu
465                     470                 475                 480
Ile Val Ile Ile Thr Val Val Ala Ala Ala Val Ile Met Gly Thr Ala
                485                 490                 495
Gly Leu Ser Thr Tyr Leu Tyr Asn Arg Gln Arg Lys Ile Lys Lys Tyr
        500                 505                 510
Arg Leu Gln Gln Ala Gln Lys Gly Thr Pro Met Lys Pro Asn Thr Gln
        515                 520                 525
Ala Thr Pro Pro
    530


        <210> 112
        <211> 1124
        <212> PRT
        <213> Homo sapiens


        <400> 112
Met Asp Ser Leu Ala Ser Leu Val Leu Cys Gly Val Ser Leu Leu Leu
 1               5                  10                  15
Ser Gly Thr Val Glu Gly Ala Met Asp Leu Ile Leu Ile Asn Ser Leu
            20                  25                  30
Pro Leu Val Ser Asp Ala Glu Thr Ser Leu Thr Cys Ile Ala Ser Gly
            35                  40                  45
Trp Arg Pro His Glu Pro Ile Thr Ile Gly Arg Asp Phe Glu Ala Leu
        50                  55                  60
Met Asn Gln His Gln Asp Pro Leu Glu Val Thr Gln Asp Val Thr Arg
65                  70                  75                  80
Glu Trp Ala Lys Lys Val Val Trp Lys Arg Glu Lys Ala Ser Lys Ile
                85                  90                  95
Asn Gly Ala Tyr Phe Cys Glu Gly Arg Val Arg Gly Glu Ala Ile Arg
            100                 105                 110
Ile Arg Thr Met Lys Met Arg Gln Gln Ala Ser Phe Leu Pro Ala Thr
        115                 120                 125
Leu Thr Met Thr Val Asp Lys Gly Asp Asn Val Asn Ile Ser Phe Lys
        130                 135                 140
Lys Val Leu Ile Lys Glu Glu Asp Ala Val Ile Tyr Lys Asn Gly Ser
145                 150                 155                 160
Phe Ile His Ser Val Pro Arg His Glu Val Pro Asp Ile Leu Glu Val
                165                 170                 175
His Leu Pro His Ala Gln Pro Gln Asp Ala Gly Val Tyr Ser Ala Arg
            180                 185                 190
Tyr Ile Gly Gly Asn Leu Phe Thr Ser Ala Phe Thr Arg Leu Ile Val
        195                 200                 205
Arg Arg Cys Glu Ala Gln Lys Trp Gly Pro Glu Cys Asn His Leu Cys
        210                 215                 220
Thr Ala Cys Met Asn Asn Gly Val Cys His Glu Asp Thr Gly Glu Cys
225                 230                 235                 240
Ile Cys Pro Pro Gly Phe Met Gly Arg Thr Cys Glu Lys Ala Cys Glu
                245                 250                 255
Leu His Thr Phe Gly Arg Thr Cys Lys Glu Arg Cys Ser Gly Gln Glu
            260                 265                 270
Gly Cys Lys Ser Tyr Val Phe Cys Leu Pro Asp Pro Tyr Gly Cys Ser
            275                 280                 285
Cys Ala Thr Gly Trp Lys Gly Leu Gln Cys Asn Glu Ala Cys His Pro
        290                 295                 300
Gly Phe Tyr Gly Pro Asp Cys Lys Leu Arg Cys Ser Cys Asn Asn Gly
305                 310                 315                 320
```

121

```
Glu Met Cys Asp Arg Phe Gln Gly Cys Leu Cys Ser Pro Gly Trp Gln
            325                     330                     335
Gly Leu Gln Cys Glu Arg Glu Gly Ile Pro Arg Met Thr Pro Lys Ile
            340                     345                     350
Val Asp Leu Pro Asp His Ile Glu Val Asn Ser Gly Lys Phe Asn Pro
            355                     360                     365
Ile Cys Lys Ala Ser Gly Trp Pro Leu Pro Thr Asn Glu Glu Met Thr
    370                     375                     380
Leu Val Lys Pro Asp Gly Thr Val Leu His Pro Lys Asp Phe Asn His
385                     390                     395                     400
Thr Asp His Phe Ser Val Ala Ile Phe Thr Ile His Arg Ile Leu Pro
                405                     410                     415
Pro Asp Ser Gly Val Trp Val Cys Ser Val Asn Thr Val Ala Gly Met
            420                     425                     430
Val Glu Lys Pro Phe Asn Ile Ser Val Lys Val Leu Pro Lys Pro Leu
            435                     440                     445
Asn Ala Pro Asn Val Ile Asp Thr Gly His Asn Phe Ala Val Ile Asn
    450                     455                     460
Ile Ser Ser Glu Pro Tyr Phe Gly Asp Gly Pro Ile Lys Ser Lys Lys
465                     470                     475                     480
Leu Leu Tyr Lys Pro Val Asn His Tyr Glu Ala Trp Gln His Ile Gln
                485                     490                     495
Val Thr Asn Glu Ile Val Thr Leu Asn Tyr Leu Glu Pro Arg Thr Glu
            500                     505                     510
Tyr Glu Leu Cys Val Gln Leu Val Arg Arg Gly Glu Gly Gly Glu Gly
            515                     520                     525
His Pro Gly Pro Val Arg Arg Phe Thr Thr Ala Ser Ile Gly Leu Pro
    530                     535                     540
Pro Pro Arg Gly Leu Asn Leu Leu Pro Lys Ser Gln Thr Thr Leu Asn
545                     550                     555                     560
Leu Thr Trp Gln Pro Ile Phe Pro Ser Ser Glu Asp Asp Phe Tyr Val
                565                     570                     575
Glu Val Glu Arg Arg Ser Val Gln Lys Ser Asp Gln Gln Asn Ile Lys
            580                     585                     590
Val Pro Gly Asn Leu Thr Ser Val Leu Leu Asn Asn Leu His Pro Arg
            595                     600                     605
Glu Gln Tyr Val Val Arg Ala Arg Val Asn Thr Lys Ala Gln Gly Glu
    610                     615                     620
Trp Ser Glu Asp Leu Thr Ala Trp Thr Leu Ser Asp Ile Leu Pro Pro
625                     630                     635                     640
Gln Pro Glu Asn Ile Lys Ile Ser Asn Ile Thr His Ser Ser Ala Val
                645                     650                     655
Ile Ser Trp Thr Ile Leu Asp Gly Tyr Ser Ile Ser Ser Ile Thr Ile
            660                     665                     670
Arg Tyr Lys Val Gln Gly Lys Asn Glu Asp Gln His Val Asp Val Lys
            675                     680                     685
Ile Lys Asn Ala Thr Ile Ile Gln Tyr Gln Leu Lys Gly Leu Glu Pro
    690                     695                     700
Glu Thr Ala Tyr Gln Val Asp Ile Phe Ala Glu Asn Asn Ile Gly Ser
705                     710                     715                     720
Ser Asn Pro Ala Phe Ser His Glu Leu Val Thr Leu Pro Glu Ser Gln
                725                     730                     735
Ala Pro Ala Asp Leu Gly Gly Gly Lys Met Leu Leu Ile Ala Ile Leu
            740                     745                     750
Gly Ser Ala Gly Met Thr Cys Leu Thr Val Leu Leu Ala Phe Leu Ile
            755                     760                     765
Ile Leu Gln Leu Lys Arg Ala Asn Val Gln Arg Arg Met Ala Gln Ala
    770                     775                     780
Phe Gln Asn Val Arg Glu Glu Pro Ala Val Gln Phe Asn Ser Gly Thr
785                     790                     795                     800
```

Leu Ala Leu Asn Arg Lys Val Lys Asn Asn Pro Asp Pro Thr Ile Tyr
                  805   810   815
Pro Val Leu Asp Trp Asn Asp Ile Lys Phe Gln Asp Val Ile Gly Glu
              820   825   830
Gly Asn Phe Gly Gln Val Leu Lys Ala Arg Ile Lys Lys Asp Gly Leu
          835   840   845
Arg Met Asp Ala Ala Ile Lys Arg Met Lys Glu Tyr Ala Ser Lys Asp
    850   855   860
Asp His Arg Asp Phe Ala Gly Glu Leu Glu Val Leu Cys Lys Leu Gly
865   870   875   880
His His Pro Asn Ile Ile Asn Leu Leu Gly Ala Cys Glu His Arg Gly
              885   890   895
Tyr Leu Tyr Leu Ala Ile Glu Tyr Ala Pro His Gly Asn Leu Leu Asp
          900   905   910
Phe Leu Arg Lys Ser Arg Val Leu Glu Thr Asp Pro Ala Phe Ala Ile
      915   920   925
Ala Asn Ser Thr Ala Ser Thr Leu Ser Ser Gln Gln Leu Leu His Phe
    930   935   940
Ala Ala Asp Val Ala Arg Gly Met Asp Tyr Leu Ser Gln Lys Gln Phe
945   950   955   960
Ile His Arg Asp Leu Ala Ala Arg Asn Ile Leu Val Gly Glu Asn Tyr
              965   970   975
Val Ala Lys Ile Ala Asp Phe Gly Leu Ser Arg Gly Gln Glu Val Tyr
          980   985   990
Val Lys Lys Thr Met Gly Arg Leu Pro Val Arg Trp Met Ala Ile Glu
          995   1000   1005
Ser Leu Asn Tyr Ser Val Tyr Thr Thr Asn Ser Asp Val Trp Ser Tyr
    1010   1015   1020
Gly Val Leu Leu Trp Glu Ile Val Ser Leu Gly Gly Thr Pro Tyr Cys
1025   1030   1035   1040
Gly Met Thr Cys Ala Glu Leu Tyr Glu Lys Leu Pro Gln Gly Tyr Arg
              1045   1050   1055
Leu Glu Lys Pro Leu Asn Cys Asp Asp Glu Val Tyr Asp Leu Met Arg
              1060   1065   1070
Gln Cys Trp Arg Glu Lys Pro Tyr Glu Arg Pro Ser Phe Ala Gln Ile
          1075   1080   1085
Leu Val Ser Leu Asn Arg Met Leu Glu Glu Arg Lys Thr Tyr Val Asn
          1090   1095   1100
Thr Thr Leu Tyr Glu Lys Phe Thr Tyr Ala Gly Ile Asp Cys Ser Ala
1105   1110   1115   1120
Glu Glu Ala Ala

        <210> 113
        <211> 308
        <212> PRT
        <213> Homo sapiens

        <400> 113
Met Pro Gly Gln Glu Leu Arg Thr Val Asn Gly Ser Gln Met Leu Leu
    1   5   10   15
Val Leu Leu Val Leu Ser Trp Leu Pro His Gly Gly Ala Leu Ser Leu
              20   25   30
Ala Glu Ala Ser Arg Ala Ser Phe Pro Gly Pro Ser Glu Leu His Ser
          35   40   45
Glu Asp Ser Arg Phe Arg Glu Leu Arg Lys Arg Tyr Glu Asp Leu Leu
      50   55   60
Thr Arg Leu Arg Ala Asn Gln Ser Trp Glu Asp Ser Asn Thr Asp Leu
65   70   75   80
Val Pro Ala Pro Ala Val Arg Ile Leu Thr Pro Glu Val Arg Leu Gly
              85   90   95

123

Ser Gly Gly His Leu His Leu Arg Ile Ser Arg Ala Ala Leu Pro Glu
        100   105   110
Gly Leu Pro Glu Ala Ser Arg Leu His Arg Ala Leu Phe Arg Leu Ser
        115   120   125
Pro Thr Ala Ser Arg Ser Trp Asp Val Thr Arg Pro Leu Arg Arg Gln
    130   135   140
Leu Ser Leu Ala Arg Pro Gln Ala Pro Ala Leu His Leu Arg Leu Ser
145   150   155   160
Pro Pro Pro Ser Gln Ser Asp Gln Leu Leu Ala Glu Ser Ser Ser Ala
                165   170   175
Arg Pro Gln Leu Glu Leu His Leu Arg Pro Gln Ala Ala Arg Gly Arg
            180   185   190
Arg Arg Ala Arg Ala Arg Asn Gly Asp Asp Cys Pro Leu Gly Pro Gly
        195   200   205
Arg Cys Cys Arg Leu His Thr Val Arg Ala Ser Leu Glu Asp Leu Gly
    210   215   220
Trp Ala Asp Trp Val Leu Ser Pro Arg Glu Val Gln Val Thr Met Cys
225   230   235   240
Ile Gly Ala Cys Pro Ser Gln Phe Arg Ala Ala Asn Met His Ala Gln
                245   250   255
Ile Lys Thr Ser Leu His Arg Leu Lys Pro Asp Thr Glu Pro Ala Pro
                260   265   270
Cys Cys Val Pro Ala Ser Tyr Asn Pro Met Val Leu Ile Gln Lys Thr
        275   280   285
Asp Thr Gly Val Ser Leu Gln Thr Tyr Asp Asp Leu Leu Ala Lys Asp
    290   295   300
Cys His Cys Ile
305

        <210> 114
        <211> 1170
        <212> PRT
        <213> Homo sapiens

        <400> 114
Met Gly Leu Ala Trp Gly Leu Gly Val Leu Phe Leu Met His Val Cys
1   5   10   15
Gly Thr Asn Arg Ile Pro Glu Ser Gly Gly Asp Asn Ser Val Phe Asp
            20   25   30
Ile Phe Glu Leu Thr Gly Ala Ala Arg Lys Gly Ser Gly Arg Arg Leu
        35   40   45
Val Lys Gly Pro Asp Pro Ser Ser Pro Ala Phe Arg Ile Glu Asp Ala
    50   55   60
Asn Leu Ile Pro Pro Val Pro Asp Asp Lys Phe Gln Asp Leu Val Asp
65   70   75   80
Ala Val Arg Ala Glu Lys Gly Phe Leu Leu Leu Ala Ser Leu Arg Gln
                85   90   95
Met Lys Lys Thr Arg Gly Thr Leu Leu Ala Leu Glu Arg Lys Asp His
            100   105   110
Ser Gly Gln Val Phe Ser Val Val Ser Asn Gly Lys Ala Gly Thr Leu
            115   120   125
Asp Leu Ser Leu Thr Val Gln Gly Lys Gln His Val Val Ser Val Glu
    130   135   140
Glu Ala Leu Leu Ala Thr Gly Gln Trp Lys Ser Ile Thr Leu Phe Val
145   150   155   160
Gln Glu Asp Arg Ala Gln Leu Tyr Ile Asp Cys Glu Lys Met Glu Asn
                165   170   175
Ala Glu Leu Asp Val Pro Ile Gln Ser Val Phe Thr Arg Asp Leu Ala
            180   185   190
Ser Ile Ala Arg Leu Arg Ile Ala Lys Gly Gly Val Asn Asp Asn Phe
        195   200   205

                        124

```
Gln Gly Val Leu Gln Asn Val Arg Phe Val Phe Gly Thr Thr Pro Glu
    210                 215                 220
Asp Ile Leu Arg Asn Lys Gly Cys Ser Ser Ser Thr Ser Val Leu Leu
225                 230                 235                 240
Thr Leu Asp Asn Asn Val Val Asn Gly Ser Ser Pro Ala Ile Arg Thr
                245                 250                 255
Asn Tyr Ile Gly His Lys Thr Lys Asp Leu Gln Ala Ile Cys Gly Ile
                260                 265                 270
Ser Cys Asp Glu Leu Ser Ser Met Val Leu Glu Leu Arg Gly Leu Arg
            275                 280                 285
Thr Ile Val Thr Thr Leu Gln Asp Ser Ile Arg Lys Val Thr Glu Glu
    290                 295                 300
Asn Lys Glu Leu Ala Asn Glu Leu Arg Arg Pro Pro Leu Cys Tyr His
305                 310                 315                 320
Asn Gly Val Gln Tyr Arg Asn Asn Glu Glu Trp Thr Val Asp Ser Cys
                325                 330                 335
Thr Glu Cys His Cys Gln Asn Ser Val Thr Ile Cys Lys Lys Val Ser
            340                 345                 350
Cys Pro Ile Met Pro Cys Ser Asn Ala Thr Val Pro Asp Gly Glu Cys
            355                 360                 365
Cys Pro Arg Cys Trp Pro Ser Asp Ser Ala Asp Asp Gly Trp Ser Pro
    370                 375                 380
Trp Ser Glu Trp Thr Ser Cys Ser Thr Ser Cys Gly Asn Gly Ile Gln
385                 390                 395                 400
Gln Arg Gly Arg Ser Cys Asp Ser Leu Asn Asn Arg Cys Glu Gly Ser
            405                 410                 415
Ser Val Gln Thr Arg Thr Cys His Ile Gln Glu Cys Asp Lys Arg Phe
            420                 425                 430
Lys Gln Asp Gly Gly Trp Ser His Trp Ser Pro Trp Ser Ser Cys Ser
            435                 440                 445
Val Thr Cys Gly Asp Gly Val Ile Thr Arg Ile Arg Leu Cys Asn Ser
    450                 455                 460
Pro Ser Pro Gln Met Asn Gly Lys Pro Cys Glu Gly Glu Ala Arg Glu
465                 470                 475                 480
Thr Lys Ala Cys Lys Lys Asp Ala Cys Pro Ile Asn Gly Gly Trp Gly
                485                 490                 495
Pro Trp Ser Pro Trp Asp Ile Cys Ser Val Thr Cys Gly Gly Gly Val
            500                 505                 510
Gln Lys Arg Ser Arg Leu Cys Asn Asn Pro Ala Pro Gln Phe Gly Gly
            515                 520                 525
Lys Asp Cys Val Gly Asp Val Thr Glu Asn Gln Ile Cys Asn Lys Gln
    530                 535                 540
Asp Cys Pro Ile Asp Gly Cys Leu Ser Asn Pro Cys Phe Ala Gly Val
545                 550                 555                 560
Lys Cys Thr Ser Tyr Pro Asp Gly Ser Trp Lys Cys Gly Ala Cys Pro
                565                 570                 575
Pro Gly Tyr Ser Gly Asn Gly Ile Gln Cys Thr Asp Val Asp Glu Cys
            580                 585                 590
Lys Glu Val Pro Asp Ala Cys Phe Asn His Asn Gly Glu His Arg Cys
    595                 600                 605
Glu Asn Thr Asp Pro Gly Tyr Asn Cys Leu Pro Cys Pro Pro Arg Phe
    610                 615                 620
Thr Gly Ser Gln Pro Phe Gly Gln Gly Val Glu His Ala Thr Ala Asn
625                 630                 635                 640
Lys Gln Val Cys Lys Pro Arg Asn Pro Cys Thr Asp Gly Thr His Asp
                645                 650                 655
Cys Asn Lys Asn Ala Lys Cys Asn Tyr Leu Gly His Tyr Ser Asp Pro
            660                 665                 670
Met Tyr Arg Cys Glu Cys Lys Pro Gly Tyr Ala Gly Asn Gly Ile Ile
    675                 680                 685
```

125

Cys Gly Glu Asp Thr Asp Leu Asp Gly Trp Pro Asn Glu Asn Leu Val
    690   695   700
Cys Val Ala Asn Ala Thr Tyr His Cys Lys Lys Asp Asn Cys Pro Asn
705   710   715   720
Leu Pro Asn Ser Gly Gln Glu Asp Tyr Asp Lys Asp Gly Ile Gly Asp
                725   730   735
Ala Cys Asp Asp Asp Asp Asn Asp Lys Ile Pro Asp Asp Arg Asp
            740   745   750
Asn Cys Pro Phe His Tyr Asn Pro Ala Gln Tyr Asp Tyr Asp Arg Asp
        755   760   765
Asp Val Gly Asp Arg Cys Asp Asn Cys Pro Tyr Asn His Asn Pro Asp
    770   775   780
Gln Ala Asp Thr Asp Asn Asn Gly Glu Gly Asp Ala Cys Ala Ala Asp
785   790   795   800
Ile Asp Gly Asp Gly Ile Leu Asn Glu Arg Asp Asn Cys Gln Tyr Val
            805   810   815
Tyr Asn Val Asp Gln Arg Asp Thr Asp Met Asp Gly Val Gly Asp Gln
        820   825   830
Cys Asp Asn Cys Pro Leu Glu His Asn Pro Asp Gln Leu Asp Ser Asp
        835   840   845
Ser Asp Arg Ile Gly Asp Thr Cys Asp Asn Asn Gln Asp Ile Asp Glu
    850   855   860
Asp Gly His Gln Asn Asn Leu Asp Asn Cys Pro Tyr Val Pro Asn Ala
865   870   875   880
Asn Gln Ala Asp His Asp Lys Asp Gly Lys Gly Asp Ala Cys Asp His
            885   890   895
Asp Asp Asp Asn Asp Gly Ile Pro Asp Asp Lys Asp Asn Cys Arg Leu
            900   905   910
Val Pro Asn Pro Asp Gln Lys Asp Ser Asp Gly Asp Gly Arg Gly Asp
    915   920   925
Ala Cys Lys Asp Asp Phe Asp His Asp Ser Val Pro Asp Ile Asp Asp
    930   935   940
Ile Cys Pro Glu Asn Val Asp Ile Ser Glu Thr Asp Phe Arg Arg Phe
945   950   955   960
Gln Met Ile Pro Leu Asp Pro Lys Gly Thr Ser Gln Asn Asp Pro Asn
            965   970   975
Trp Val Val Arg His Gln Gly Lys Glu Leu Val Gln Thr Val Asn Cys
            980   985   990
Asp Pro Gly Leu Ala Val Gly Tyr Asp Glu Phe Asn Ala Val Asp Phe
    995   1000   1005
Ser Gly Thr Phe Phe Ile Asn Thr Glu Arg Asp Asp Asp Tyr Ala Gly
    1010   1015   1020
Phe Val Phe Gly Tyr Gln Ser Ser Ser Arg Phe Tyr Val Val Met Trp
1025   1030   1035   1040
Lys Gln Val Thr Gln Ser Tyr Trp Asp Thr Asn Pro Thr Arg Ala Gln
                1045   1050   1055
Gly Tyr Ser Gly Leu Ser Val Lys Val Val Asn Ser Thr Thr Gly Pro
                1060   1065   1070
Gly Glu His Leu Arg Asn Ala Leu Trp His Thr Gly Asn Thr Pro Gly
            1075   1080   1085
Gln Val Arg Thr Leu Trp His Asp Pro Arg His Ile Gly Trp Lys Asp
    1090   1095   1100
Phe Thr Ala Tyr Arg Trp Arg Leu Ser His Arg Pro Lys Thr Gly Phe
1105   1110   1115   1120
Ile Arg Val Val Met Tyr Glu Gly Lys Lys Ile Met Ala Asp Ser Gly
                1125   1130   1135
Pro Ile Tyr Asp Lys Thr Tyr Ala Gly Gly Arg Leu Gly Leu Phe Val
            1140   1145   1150

```
Phe Ser Gln Glu Met Val Phe Phe Ser Asp Leu Lys Tyr Glu Cys Arg
        1155                1160                1165
Asp Pro
    1170


        <210> 115
        <211> 373
        <212> PRT
        <213> Homo sapiens


        <400> 115
Met Ser Ser Thr Pro His Asp Pro Phe Tyr Ser Ser Pro Phe Gly Pro
1               5               10              15
Phe Tyr Arg Arg His Thr Pro Tyr Met Val Gln Pro Glu Tyr Arg Ile
        20                      25              30
Tyr Glu Met Asn Lys Arg Leu Gln Ser Arg Thr Glu Asp Ser Asp Asn
        35                      40              45
Leu Trp Trp Asp Ala Phe Ala Thr Glu Phe Phe Glu Asp Asp Ala Thr
    50                      55              60
Leu Thr Leu Ser Phe Cys Leu Glu Asp Gly Pro Lys Arg Tyr Thr Ile
65                      70              75                      80
Gly Arg Thr Leu Ile Pro Arg Tyr Phe Ser Thr Val Phe Glu Gly Gly
                85                      90                      95
Val Thr Asp Leu Tyr Tyr Ile Leu Lys His Ser Lys Glu Ser Tyr His
            100                     105                     110
Asn Ser Ser Ile Thr Val Asp Cys Asp Gln Cys Thr Met Val Thr Gln
        115                     120                     125
His Gly Lys Pro Met Phe Thr Lys Val Cys Thr Glu Gly Arg Leu Ile
        130                     135                     140
Leu Glu Phe Thr Phe Asp Asp Leu Met Arg Ile Lys Thr Trp His Phe
145                     150                     155                     160
Thr Ile Arg Gln Tyr Arg Glu Leu Val Pro Arg Ser Ile Leu Ala Met
                165                     170                     175
His Ala Gln Asp Pro Gln Val Leu Asp Gln Leu Ser Lys Asn Ile Thr
                180                     185                     190
Arg Met Gly Leu Thr Asn Phe Thr Leu Asn Tyr Leu Arg Leu Cys Val
        195                     200                     205
Ile Leu Glu Pro Met Gln Glu Leu Met Ser Arg His Lys Thr Tyr Asn
        210                     215              ,      220
Leu Ser Pro Arg Asp Cys Leu Lys Thr Cys Leu Phe Gln Lys Trp Gln
225                     230                     235                     240
Arg Met Val Ala Pro Pro Ala Glu Pro Thr Arg Gln Pro Thr Thr Lys
                245                     250                     255
Arg Arg Lys Arg Lys Asn Ser Thr Ser Ser Thr Ser Asn Ser Ser Ala
            260                     265                     270
Gly Asn Asn Ala Asn Ser Thr Gly Ser Lys Lys Lys Thr Thr Ala Ala
        275                     280                     285
Asn Leu Ser Leu Ser Ser Gln Val Pro Asp Val Met Val Val Gly Glu
    290                     295                     300
Pro Thr Leu Met Gly Gly Glu Phe Gly Asp Glu Asp Glu Arg Leu Ile
305                     310                     315                     320
Thr Arg Leu Glu Asn Thr Gln Tyr Asp Ala Ala Asn Gly Met Asp Asp
                325                     330                     335
Glu Glu Asp Phe Asn Asn Ser Pro Ala Leu Gly Asn Asn Ser Pro Trp
                340                     345                     350
Asn Ser Lys Pro Pro Ala Thr Gln Glu Thr Lys Ser Glu Asn Pro Pro
        355                     360                     365
Pro Gln Ala Ser Gln
    370
```


127

<210> 116
<211> 73
<212> PRT
<213> Homo sapiens

<400> 116
Met Pro Ala Leu His Ile Glu Asp Leu Pro Glu Lys Glu Lys Leu Lys
1   5   10   15
Met Glu Val Glu Gln Leu Arg Lys Glu Val Lys Leu Gln Arg Gln Gln
            20   25   30
Val Ser Lys Cys Ser Glu Glu Ile Lys Asn Tyr Ile Glu Glu Arg Ser
            35   40   45
Gly Glu Asp Pro Leu Val Lys Gly Ile Pro Glu Asp Lys Asn Pro Phe
    50   55   60
Lys Glu Lys Gly Ser Cys Val Ile Ser
65   70

<210> 117
<211> 667
<212> PRT
<213> Homo sapiens

<400> 117
Met His His Gln Gln Arg Met Ala Ala Leu Gly Thr Asp Lys Glu Leu
1   5   10   15
Ser Asp Leu Leu Asp Phe Ser Ala Met Phe Ser Pro Pro Val Ser Ser
            20   25   30
Gly Lys Asn Gly Pro Thr Ser Leu Ala Ser Gly His Phe Thr Gly Ser
            35   40   45
Asn Val Glu Asp Arg Ser Ser Ser Gly Ser Trp Gly Asn Gly Gly His
            50   55   60
Pro Ser Pro Ser Arg Asn Tyr Gly Asp Gly Thr Pro Tyr Asp His Met
65   70   75   80
Thr Ser Arg Asp Leu Gly Ser His Asp Asn Leu Ser Pro Pro Phe Val
                85   90   95
Asn Ser Arg Ile Gln Ser Lys Thr Glu Arg Gly Ser Tyr Ser Ser Tyr
            100   105   110
Gly Arg Glu Ser Asn Leu Gln Gly Cys His Gln Gln Ser Leu Leu Gly
            115   120   125
Gly Asp Met Asp Met Gly Asn Pro Gly Thr Leu Ser Pro Thr Lys Pro
            130   135   140
Gly Ser Gln Tyr Tyr Gln Tyr Ser Ser Asn Asn Pro Arg Arg Arg Pro
145   150   155   160
Leu His Ser Ser Ala Met Glu Val Gln Thr Lys Lys Val Arg Lys Val
                165   170   175
Pro Pro Gly Leu Pro Ser Ser Val Tyr Ala Pro Ser Ala Ser Thr Ala
                180   185   190
Asp Tyr Asn Arg Asp Ser Pro Gly Tyr Pro Ser Ser Lys Pro Ala Thr
            195   200   205
Ser Thr Phe Pro Ser Ser Phe Phe Met Gln Asp Gly His His Ser Ser
    210   215   220
Asp Pro Trp Ser Ser Ser Ser Gly Met Asn Gln Pro Gly Tyr Ala Gly
225   230   235   240
Met Leu Gly Asn Ser Ser His Ile Pro Gln Ser Ser Ser Tyr Cys Ser
                245   250   255
Leu His Pro His Glu Arg Leu Ser Tyr Pro Ser His Ser Ser Ala Asp
            260   265   270
Ile Asn Ser Ser Leu Pro Pro Met Ser Thr Phe His Arg Ser Gly Thr
            275   280   285
Asn His Tyr Ser Thr Ser Ser Cys Thr Pro Pro Ala Asn Gly Thr Asp
    290   295   300

128

```
Ser Ile Met Ala Asn Arg Gly Ser Gly Ala Ala Gly Ser Ser Gln Thr
305               310               315               320
Gly Asp Ala Leu Gly Lys Ala Leu Ala Ser Ile Tyr Ser Pro Asp His
            325               330               335
Thr Asn Asn Ser Phe Ser Ser Asn Pro Ser Thr Pro Val Gly Ser Pro
            340               345               350
Pro Ser Leu Ser Ala Gly Thr Ala Val Trp Ser Arg Asn Gly Gly Gln
        355               360               365
Ala Ser Ser Ser Pro Asn Tyr Glu Gly Pro Leu His Ser Leu Gln Ser
    370               375               380
Arg Ile Glu Asp Arg Leu Glu Arg Leu Asp Asp Ala Ile His Val Leu
385               390               395               400
Arg Asn His Ala Val Gly Pro Ser Thr Ala Met Pro Gly Gly His Gly
            405               410               415
Asp Met His Gly Ile Ile Gly Pro Ser His Asn Gly Ala Met Gly Gly
            420               425               430
Leu Gly Ser Gly Tyr Gly Thr Gly Leu Leu Ser Ala Asn Arg His Ser
            435               440               445
Leu Met Val Gly Thr His Arg Glu Asp Gly Val Ala Leu Arg Gly Ser
    450               455               460
His Ser Leu Leu Pro Asn Gln Val Pro Val Pro Gln Leu Pro Val Gln
465               470               475               480
Ser Ala Thr Ser Pro Asp Leu Asn Pro Pro Gln Asp Pro Tyr Arg Gly
            485               490               495
Met Pro Pro Gly Leu Gln Gly Gln Ser Val Ser Ser Gly Ser Ser Glu
            500               505               510
Ile Lys Ser Asp Asp Glu Gly Asp Glu Asn Leu Gln Asp Thr Lys Ser
            515               520               525
Ser Glu Asp Lys Lys Leu Asp Asp Asp Lys Lys Asp Ile Lys Ser Ile
    530               535               540
Thr Ser Asn Asn Asp Asp Glu Asp Leu Thr Pro Glu Gln Lys Ala Glu
545               550               555               560
Arg Glu Lys Glu Arg Arg Met Ala Asn Asn Ala Arg Glu Arg Leu Arg
            565               570               575
Val Arg Asp Ile Asn Glu Ala Phe Lys Glu Leu Gly Arg Met Val Gln
            580               585               590
Leu His Leu Lys Ser Asp Lys Pro Gln Thr Lys Leu Leu Ile Leu His
    595               600               605
Gln Ala Val Ala Val Ile Leu Ser Leu Glu Gln Gln Val Arg Glu Arg
    610               615               620
Asn Leu Asn Pro Lys Ala Ala Cys Leu Lys Arg Arg Glu Glu Glu Lys
625               630               635               640
Val Ser Ser Glu Pro Pro Pro Leu Ser Leu Ala Gly Pro His Pro Gly
            645               650               655
Met Gly Asp Ala Ser Asn His Met Gly Gln Met
            660               665
```

        <210> 118
        <211> 749
        <212> PRT
        <213> Homo sapiens

        <400> 118
```
Met Ser Phe Ile Asp Pro Tyr Gln His Ile Ile Val Glu His Gln Tyr
1               5               10              15
Ser His Lys Phe Thr Val Val Val Leu Arg Ala Thr Lys Val Thr Lys
            20              25              30
Gly Ala Phe Gly Asp Met Leu Asp Thr Pro Asp Pro Tyr Val Glu Leu
        35              40              45
Phe Ile Ser Thr Thr Pro Asp Ser Arg Lys Arg Thr Arg His Phe Asn
    50              55              60
```

```
Asn Asp Ile Asn Pro Val Trp Asn Glu Thr Phe Glu Phe Ile Leu Asp
65              70              75              80
Pro Asn Gln Glu Asn Val Leu Glu Ile Thr Leu Met Asp Ala Asn Tyr
            85              90              95
Val Met Asp Glu Thr Leu Gly Thr Ala Thr Phe Thr Val Ser Ser Met
        100             105             110
Lys Val Gly Glu Lys Lys Glu Val Pro Phe Ile Phe Asn Gln Val Thr
        115             120             125
Glu Met Val Leu Glu Met Ser Leu Glu Val Cys Ser Cys Pro Asp Leu
    130             135             140
Arg Phe Ser Met Ala Leu Cys Asp Gln Glu Lys Thr Phe Arg Gln Gln
145             150             155             160
Arg Lys Glu His Ile Arg Glu Ser Met Lys Lys Leu Leu Gly Pro Lys
            165             170             175
Asn Ser Glu Gly Leu His Ser Ala Arg Asp Val Pro Val Val Ala Ile
            180             185             190
Leu Gly Ser Gly Gly Gly Phe Arg Ala Met Val Gly Phe Ser Gly Val
        195             200             205
Met Lys Ala Leu Tyr Glu Ser Gly Ile Leu Asp Cys Ala Thr Tyr Val
    210             215             220
Ala Gly Leu Ser Gly Ser Thr Trp Tyr Met Ser Thr Leu Tyr Ser His
225             230             235             240
Pro Asp Phe Pro Glu Lys Gly Pro Glu Glu Ile Asn Glu Glu Leu Met
            245             250             255
Lys Asn Val Ser His Asn Pro Leu Leu Leu Leu Thr Pro Gln Lys Val
            260             265             270
Lys Arg Tyr Val Glu Ser Leu Trp Lys Lys Lys Ser Ser Gly Gln Pro
    275             280             285
Val Thr Phe Thr Asp Ile Phe Gly Met Leu Ile Gly Glu Thr Leu Ile
    290             295             300
His Asn Arg Met Asn Thr Thr Leu Ser Ser Leu Lys Glu Lys Val Asn
305             310             315             320
Thr Ala Gln Cys Pro Leu Pro Leu Phe Thr Cys Leu His Val Lys Pro
            325             330             335
Asp Val Ser Glu Leu Met Phe Ala Asp Trp Val Glu Phe Ser Pro Tyr
        340             345             350
Glu Ile Gly Met Ala Lys Tyr Gly Thr Phe Met Ala Pro Asp Leu Phe
        355             360             365
Gly Ser Lys Phe Phe Met Gly Thr Val Val Lys Lys Tyr Glu Glu Asn
    370             375             380
Pro Leu His Phe Leu Met Gly Val Trp Gly Ser Ala Phe Ser Ile Leu
385             390             395             400
Phe Asn Arg Val Leu Gly Val Ser Gly Ser Gln Ser Arg Gly Ser Thr
            405             410             415
Met Glu Glu Glu Leu Glu Asn Ile Thr Thr Lys His Ile Val Ser Asn
        420             425             430
Asp Ser Ser Asp Ser Asp Asp Glu Ser His Glu Pro Lys Gly Thr Glu
        435             440             445
Asn Glu Asp Ala Gly Ser Asp Tyr Gln Ser Asp Asn Gln Ala Ser Trp
    450             455             460
Ile His Arg Met Ile Met Ala Leu Val Ser Asp Ser Ala Leu Phe Asn
465             470             475             480
Thr Arg Glu Gly Arg Ala Gly Lys Val His Asn Phe Met Leu Gly Leu
            485             490             495
Asn Leu Asn Thr Ser Tyr Pro Leu Ser Pro Leu Ser Asp Phe Ala Thr
        500             505             510
Gln Asp Ser Phe Asp Asp Asp Glu Leu Asp Ala Ala Val Ala Asp Pro
        515             520             525
Asp Glu Phe Glu Arg Ile Tyr Glu Pro Leu Asp Val Lys Ser Lys Lys
    530             535             540
```

130

```
Ile His Val Val Asp Ser Gly Leu Thr Phe Asn Leu Pro Tyr Pro Leu
545             550             555             560
Ile Leu Arg Pro Gln Arg Gly Val Asp Leu Ile Ile Ser Phe Asp Phe
            565             570             575
Ser Ala Arg Pro Ser Asp Ser Ser Pro Pro Phe Lys Glu Leu Leu Leu
        580             585             590
Ala Glu Lys Trp Ala Lys Met Asn Lys Leu Pro Phe Pro Lys Ile Asp
        595             600             605
Pro Tyr Val Phe Asp Arg Glu Gly Leu Lys Glu Cys Tyr Val Phe Lys
    610             615             620
Pro Lys Asn Pro Asp Met Glu Lys Asp Cys Pro Thr Ile Ile His Phe
625             630             635             640
Val Leu Ala Asn Ile Asn Phe Arg Lys Tyr Lys Ala Pro Gly Val Pro
            645             650             655
Arg Glu Thr Glu Glu Glu Lys Glu Ile Ala Asp Phe Asp Ile Phe Asp
        660             665             670
Asp Pro Glu Ser Pro Phe Ser Thr Phe Asn Phe Gln Tyr Pro Asn Gln
    675             680             685
Ala Phe Lys Arg Leu His Asp Leu Met His Phe Asn Thr Leu Asn Asn
    690             695             700
Ile Asp Val Ile Lys Glu Ala Met Val Glu Ser Ile Glu Tyr Arg Arg
705             710             715             720
Gln Asn Pro Ser Arg Cys Ser Val Ser Leu Ser Asn Val Glu Ala Arg
            725             730             735
Arg Phe Phe Asn Lys Glu Phe Leu Ser Lys Pro Lys Ala
            740             745

        <210> 119
        <211> 235
        <212> PRT
        <213> Homo sapiens

        <400> 119
Met Asp Pro Ala Arg Pro Leu Gly Leu Ser Ile Leu Leu Leu Phe Leu
 1               5               10              15
Thr Glu Ala Ala Leu Gly Asp Ala Ala Gln Glu Pro Thr Gly Asn Asn
            20              25              30
Ala Glu Ile Cys Leu Leu Pro Leu Asp Tyr Gly Pro Cys Arg Ala Leu
        35              40              45
Leu Leu Arg Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Arg Gln Phe
    50              55              60
Leu Tyr Gly Gly Cys Glu Gly Asn Ala Asn Asn Phe Tyr Thr Trp Glu
65              70              75              80
Ala Cys Asp Asp Ala Cys Trp Arg Ile Glu Lys Val Pro Lys Val Cys
            85              90              95
Arg Leu Gln Val Ser Val Asp Asp Gln Cys Glu Gly Ser Thr Glu Lys
            100             105             110
Tyr Phe Phe Asn Leu Ser Ser Met Thr Cys Glu Lys Phe Phe Ser Gly
    115             120             125
Gly Cys His Arg Asn Arg Ile Glu Asn Arg Phe Pro Asp Glu Ala Thr
    130             135             140
Cys Met Gly Phe Cys Ala Pro Lys Lys Ile Pro Ser Phe Cys Tyr Ser
145             150             155             160
Pro Lys Asp Glu Gly Leu Cys Ser Ala Asn Val Thr Arg Tyr Tyr Phe
            165             170             175
Asn Pro Arg Tyr Arg Thr Cys Asp Ala Phe Thr Tyr Thr Gly Cys Gly
            180             185             190
Gly Asn Asp Asn Asn Phe Val Ser Arg Glu Asp Cys Lys Arg Ala Cys
            195             200             205
Ala Lys Ala Leu Lys Lys Lys Lys Met Pro Lys Leu Arg Phe Ala
    210             215             220
```

131

Ser Arg Ile Arg Lys Ile Arg Lys Lys Gln Phe
225   230   235

        <210> 120
        <211> 2058
        <212> PRT
        <213> Homo sapiens

        <400> 120
Met Asp Asn Phe Phe Thr Glu Gly Thr Arg Val Trp Leu Arg Glu Asn
 1   5   10   15
Gly Gln His Phe Pro Ser Thr Val Asn Ser Cys Ala Glu Gly Ile Val
                20   25   30
Val Phe Arg Thr Asp Tyr Gly Gln Val Phe Thr Tyr Lys Gln Ser Thr
            35   40   45
Ile Thr His Gln Lys Val Thr Ala Met His Pro Thr Asn Glu Glu Gly
        50   55   60
Val Asp Asp Met Ala Ser Leu Thr Glu Leu His Gly Gly Ser Ile Met
65   70   75   80
Tyr Asn Leu Phe Gln Arg Tyr Lys Arg Asn Gln Ile Tyr Thr Tyr Ile
                85   90   95
Gly Ser Ile Leu Ala Ser Val Asn Pro Tyr Gln Pro Ile Ala Gly Leu
            100   105   110
Tyr Glu Pro Ala Thr Met Glu Gln Tyr Ser Arg Arg His Leu Gly Glu
            115   120   125
Leu Pro Pro His Ile Phe Ala Ile Ala Asn Glu Cys Tyr Arg Cys Leu
            130   135   140
Trp Lys Arg Tyr Asp Asn Gln Cys Ile Leu Ile Ser Gly Glu Ser Gly
145   150   155   160
Ala Gly Lys Thr Glu Ser Thr Lys Leu Ile Leu Lys Phe Leu Ser Val
                165   170   175
Ile Ser Gln Gln Ser Leu Glu Leu Ser Leu Lys Glu Lys Thr Ser Cys
            180   185   190
Val Glu Arg Ala Ile Leu Glu Ser Ser Pro Ile Met Glu Ala Phe Gly
            195   200   205
Asn Ala Lys Thr Val Tyr Asn Asn Asn Ser Ser Arg Phe Gly Lys Phe
            210   215   220
Val Gln Leu Asn Ile Cys Gln Lys Gly Asn Ile Gln Gly Gly Arg Ile
225   230   235   240
Val Asp Tyr Leu Leu Glu Lys Asn Arg Val Val Arg Gln Asn Pro Gly
                245   250   255
Glu Arg Asn Tyr His Ile Phe Tyr Ala Leu Leu Ala Gly Leu Glu His
            260   265   270
Glu Glu Arg Glu Glu Phe Tyr Leu Ser Thr Pro Glu Asn Tyr His Tyr
            275   280   285
Leu Asn Gln Ser Gly Cys Val Glu Asp Lys Thr Ile Ser Asp Gln Glu
            290   295   300
Ser Phe Arg Glu Val Ile Thr Ala Met Asp Val Met Gln Phe Ser Lys
305   310   315   320
Glu Glu Val Arg Glu Val Ser Arg Leu Leu Ala Gly Ile Leu His Leu
                325   330   335
Gly Asn Ile Glu Phe Ile Thr Ala Gly Gly Ala Gln Val Ser Phe Lys
            340   345   350
Thr Ala Leu Gly Arg Ser Ala Glu Leu Leu Gly Leu Asp Pro Thr Gln
            355   360   365
Leu Thr Asp Ala Leu Thr Gln Arg Ser Met Phe Leu Arg Gly Glu Glu
            370   375   380
Ile Leu Thr Pro Leu Asn Val Gln Gln Ala Val Asp Ser Arg Asp Ser
385   390   395   400
Leu Ala Met Ala Leu Tyr Ala Cys Cys Phe Glu Trp Val Ile Lys Lys
                405   410   415

                            132

Ile Asn Ser Arg Ile Lys Gly Asn Glu Asp Phe Lys Ser Ile Gly Ile
        420   425   430
Leu Asp Ile Phe Gly Phe Glu Asn Phe Glu Val Asn His Phe Glu Gln
        435   440   445
Phe Asn Ile Asn Tyr Ala Asn Glu Lys Leu Gln Glu Tyr Phe Asn Lys
    450   455   460
His Ile Phe Ser Leu Glu Gln Leu Glu Tyr Ser Arg Glu Gly Leu Val
465   470   475   480
Trp Glu Asp Ile Asp Trp Ile Asp Asn Gly Glu Cys Leu Asp Leu Ile
            485   490   495
Glu Lys Lys Leu Gly Leu Leu Ala Leu Ile Asn Glu Glu Ser His Phe
            500   505   510
Pro Gln Ala Thr Asp Ser Thr Leu Leu Glu Lys Leu His Ser Gln His
    515   520   525
Ala Asn Asn His Phe Tyr Val Lys Pro Arg Val Ala Val Asn Asn Phe
    530   535   540
Gly Val Lys His Tyr Ala Gly Glu Val Gln Tyr Asp Val Arg Gly Ile
545   550   555   560
Leu Glu Lys Asn Arg Asp Thr Phe Arg Asp Asp Leu Leu Asn Leu Leu
            565   570   575
Arg Glu Ser Arg Phe Asp Phe Ile Tyr Asp Leu Phe Glu His Val Ser
        580   585   590
Ser Arg Asn Asn Gln Asp Thr Leu Lys Cys Gly Ser Lys His Arg Arg
        595   600   605
Pro Thr Val Ser Ser Gln Phe Lys Asp Ser Leu His Ser Leu Met Ala
    610   615   620
Thr Leu Ser Ser Ser Asn Pro Phe Phe Val Arg Cys Ile Lys Pro Asn
625   630   635   640
Met Gln Lys Met Pro Asp Gln Phe Asp Gln Ala Val Val Leu Asn Gln
            645   650   655
Leu Arg Tyr Ser Gly Met Leu Glu Thr Val Arg Ile Arg Lys Ala Gly
        660   665   670
Tyr Ala Val Arg Arg Pro Phe Gln Asp Phe Tyr Lys Arg Tyr Lys Val
    675   680   685
Leu Met Arg Asn Leu Ala Leu Pro Glu Asp Val Arg Gly Lys Cys Thr
    690   695   700
Ser Leu Leu Gln Leu Tyr Asp Ala Ser Asn Ser Glu Trp Gln Leu Gly
705   710   715   720
Lys Thr Lys Val Phe Leu Arg Glu Ser Leu Glu Gln Lys Leu Glu Lys
            725   730   735
Arg Arg Glu Glu Glu Val Ser His Ala Ala Met Val Ile Arg Ala His
            740   745   750
Val Leu Gly Phe Leu Ala Arg Lys Gln Tyr Arg Lys Val Leu Tyr Cys
            755   760   765
Val Val Ile Ile Gln Lys Asn Tyr Arg Ala Phe Leu Leu Arg Arg Arg
    770   775   780
Phe Leu His Leu Lys Lys Ala Ala Ile Val Phe Gln Lys Gln Leu Arg
785   790   795   800
Gly Gln Ile Ala Arg Arg Val Tyr Arg Gln Leu Leu Ala Glu Lys Arg
            805   810   815
Glu Gln Glu Glu Lys Lys Lys Gln Glu Glu Glu Lys Lys Lys Arg
            820   825   830
Glu Glu Glu Glu Arg Glu Arg Glu Arg Arg Glu Ala Glu Leu
    835   840   845
Arg Ala Gln Gln Glu Glu Glu Thr Arg Lys Gln Gln Glu Leu Glu Ala
    850   855   860
Leu Gln Lys Ser Gln Lys Glu Ala Glu Leu Thr Arg Glu Leu Glu Lys
865   870   875   880
Gln Lys Glu Asn Lys Gln Val Glu Glu Ile Leu Arg Leu Glu Lys Glu
            885   890   895

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Ile Glu Asp Leu Gln Arg Met Lys Glu Gln Gln Glu Leu Ser Leu Thr
            900                     905                 910
Glu Ala Ser Leu Gln Lys Leu Gln Glu Arg Arg Asp Gln Glu Leu Arg
            915                 920                 925
Arg Leu Glu Glu Glu Ala Cys Arg Ala Ala Gln Glu Phe Leu Glu Ser
    930                 935                 940
Leu Asn Phe Asp Glu Ile Asp Glu Cys Val Arg Asn Ile Glu Arg Ser
945                 950                 955                 960
Leu Ser Val Gly Ser Glu Phe Ser Ser Glu Leu Ala Glu Ser Ala Cys
            965                 970                 975
Glu Glu Lys Pro Asn Phe Asn Phe Ser Gln Pro Tyr Pro Glu Glu Glu
            980                 985                 990
Val Asp Glu Gly Phe Glu Ala Asp Asp Asp Ala Phe Lys Asp Ser Pro
    995                 1000                1005
Asn Pro Ser Glu His Gly His Ser Asp Gln Arg Thr Ser Gly Ile Arg
    1010                1015                1020
Thr Ser Asp Asp Ser Ser Glu Glu Asp Pro Tyr Met Asn Asp Thr Val
1025                1030                1035                1040
Val Pro Thr Ser Pro Ser Ala Asp Ser Thr Val Leu Leu Ala Pro Ser
            1045                1050                1055
Val Gln Asp Ser Gly Ser Leu His Asn Ser Ser Ser Gly Glu Ser Thr
            1060                1065                1070
Tyr Cys Met Pro Gln Asn Ala Gly Asp Leu Pro Ser Pro Asp Gly Asp
            1075                1080                1085
Tyr Asp Tyr Asp Gln Asp Asp Tyr Glu Asp Gly Ala Ile Thr Ser Gly
            1090                1095                1100
Ser Ser Val Thr Phe Ser Asn Ser Tyr Gly Ser Gln Trp Ser Pro Asp
1105                1110                1115                1120
Tyr Arg Cys Ser Val Gly Thr Tyr Asn Ser Ser Gly Ala Tyr Arg Phe
            1125                1130                1135
Ser Ser Glu Gly Ala Gln Ser Ser Phe Glu Asp Ser Glu Glu Asp Phe
            1140                1145                1150
Asp Ser Arg Phe Asp Thr Asp Asp Glu Leu Ser Tyr Arg Arg Asp Ser
            1155                1160    ʼ           1165
Val Tyr Ser Cys Val Thr Leu Pro Tyr Phe His Ser Phe Leu Tyr Met
            1170                1175                1180
Lys Gly Gly Leu Met Asn Ser Trp Lys Arg Arg Trp Cys Val Leu Lys
1185                1190                1195                1200
Asp Glu Thr Phe Leu Trp Phe Arg Ser Lys Gln Glu Ala Leu Lys Gln
            1205                1210                1215
Gly Trp Leu His Lys Lys Gly Gly Gly Ser Ser Thr Leu Ser Arg Arg
            1220                1225                1230
Asn Trp Lys Lys Arg Trp Phe Val Leu Arg Gln Ser Lys Leu Met Tyr
            1235                1240                1245
Phe Glu Asn Asp Ser Glu Glu Lys Leu Lys Gly Thr Val Glu Val Arg
    1250                1255                1260
Thr Ala Lys Glu Ile Ile Asp Asn Thr Thr Lys Glu Asn Gly Ile Asp
1265                1270                1275                1280
Ile Ile Met Ala Asp Arg Thr Phe His Leu Ile Ala Glu Ser Pro Glu
            1285                1290                1295
Asp Ala Ser Gln Trp Phe Ser Val Leu Ser Gln Val His Ala Ser Thr
            1300                1305                1310
Asp Gln Glu Ile Gln Glu Met His Asp Glu Gln Ala Asn Pro Gln Asn
            1315                1320                1325
Ala Val Gly Thr Leu Asp Val Gly Leu Ile Asp Ser Val Cys Ala Ser
    1330                1335                1340
Asp Ser Pro Asp Arg Pro Asn Ser Phe Val Ile Ile Thr Ala Asn Arg
1345                1350                1355                1360
Val Leu His Cys Asn Ala Asp Thr Pro Glu Glu Met His His Trp Ile
            1365                1370                1375
```

134

```
Thr Leu Leu Gln Arg Ser Lys Gly Asp Thr Arg Val Glu Gly Gln Glu
          1380                1385                1390
Phe Ile Val Arg Gly Trp Leu His Lys Glu Val Lys Asn Ser Pro Lys
          1395                1400                1405
Met Ser Ser Leu Lys Leu Lys Lys Arg Trp Phe Val Leu Thr His Asn
          1410                1415                1420
Ser Leu Asp Tyr Tyr Lys Ser Ser Glu Lys Asn Ala Leu Lys Leu Gly
1425                1430                1435                1440
Thr Leu Val Leu Asn Ser Leu Cys Ser Val Val Pro Pro Asp Glu Lys
          1445                1450                1455
Ile Phe Lys Glu Thr Gly Tyr Trp Asn Val Thr Val Tyr Gly Arg Lys
          1460                1465                1470
His Cys Tyr Arg Leu Tyr Thr Lys Leu Leu Asn Glu Ala Thr Arg Trp
          1475                1480                1485
Ser Ser Ala Ile Gln Asn Val Thr Asp Thr Lys Ala Pro Ile Asp Thr
          1490                1495                1500
Pro Thr Gln Gln Leu Ile Gln Asp Ile Lys Glu Asn Cys Leu Asn Ser
1505                1510                1515                1520
Asp Val Val Glu Gln Ile Tyr Lys Arg Asn Pro Ile Leu Arg Tyr Thr
          1525                1530                1535
His His Pro Leu His Ser Pro Leu Leu Pro Leu Pro Tyr Gly Asp Ile
          1540                1545                1550
Asn Leu Asn Leu Leu Lys Asp Lys Gly Tyr Thr Thr Leu Gln Asp Glu
          1555                1560                1565
Ala Ile Lys Ile Phe Asn Ser Leu Gln Gln Leu Glu Ser Met Ser Asp
          1570                1575                1580
Pro Ile Pro Ile Ile Gln Gly Ile Leu Gln Thr Gly His Asp Leu Arg
1585                1590                1595                1600
Pro Leu Arg Asp Glu Leu Tyr Cys Gln Leu Ile Lys Gln Thr Asn Lys
          1605                1610                1615
Val Pro His Pro Gly Ser Val Gly Asn Leu Tyr Ser Trp Gln Ile Leu
          1620                1625                1630
Thr Cys Leu Ser Cys Thr Phe Leu Pro Ser Arg Gly Ile Leu Lys Tyr
          1635                1640                1645
Leu Lys Phe His Leu Lys Arg Ile Arg Glu Gln Phe Pro Gly Thr Glu
          1650                1655                1660
Met Glu Lys Tyr Ala Leu Phe Thr Tyr Glu Ser Leu Lys Lys Thr Lys
1665                1670                1675                1680
Cys Arg Glu Phe Val Pro Ser Arg Asp Glu Ile Glu Ala Leu Ile His
          1685                1690                1695
Arg Gln Glu Met Thr Ser Thr Val Tyr Cys His Gly Gly Gly Ser Cys
          1700                1705                1710
Lys Ile Thr Ile Asn Ser His Thr Thr Ala Gly Glu Val Val Glu Lys
          1715                1720                1725
Leu Ile Arg Gly Leu Ala Met Glu Asp Ser Arg Asn Met Phe Ala Leu
          1730                1735                1740
Phe Glu Tyr Asn Gly His Val Asp Lys Ala Ile Glu Ser Arg Thr Val
1745                1750                1755                1760
Val Ala Asp Val Leu Ala Lys Phe Glu Lys Leu Ala Ala Thr Ser Glu
          1765                1770                1775
Val Gly Asp Leu Pro Trp Lys Phe Tyr Phe Lys Leu Tyr Cys Phe Leu
          1780                1785                1790
Asp Thr Asp Asn Val Pro Lys Asp Ser Val Glu Phe Ala Phe Met Phe
          1795                1800                1805
Glu Gln Ala His Glu Ala Val Ile His Gly His His Pro Ala Pro Glu
          1810                1815                1820
Glu Asn Leu Gln Val Leu Ala Ala Leu Arg Leu Gln Tyr Leu Gln Gly
1825                1830                1835                1840
Asp Tyr Thr Leu His Ala Ala Ile Pro Pro Leu Glu Glu Val Tyr Ser
          1845                1850                1855
```

135

```
Leu Gln Arg Leu Lys Ala Arg Ile Ser Gln Ser Thr Lys Thr Phe Thr
            1860                    1865                1870
Pro Cys Glu Arg Leu Glu Lys Arg Arg Thr Ser Phe Leu Glu Gly Thr
            1875                    1880                1885
Leu Arg Arg Ser Phe Arg Thr Gly Ser Val Val Arg Gln Lys Val Glu
        1890                    1895                1900
Glu Glu Gln Met Leu Asp Met Trp Ile Lys Glu Glu Val Ser Ser Ala
1905                    1910                    1915                1920
Arg Ala Ser Ile Ile Asp Lys Trp Arg Lys Phe Gln Gly Met Asn Gln
                1925                    1930                1935
Glu Gln Ala Met Ala Lys Tyr Met Ala Leu Ile Lys Glu Trp Pro Gly
                1940                    1945                1950
Tyr Gly Ser Thr Leu Phe Asp Val Glu Cys Lys Glu Gly Gly Phe Pro
            1955                    1960                1965
Gln Glu Leu Trp Leu Gly Val Ser Ala Asp Ala Val Ser Val Tyr Lys
        1970                    1975                1980
Arg Gly Glu Gly Arg Pro Leu Glu Val Phe Gln Tyr Glu His Ile Leu
1985                    1990                    1995                2000
Ser Phe Gly Ala Pro Leu Ala Asn Thr Tyr Lys Ile Val Val Asp Glu
                2005                    2010                2015
Arg Glu Leu Leu Phe Glu Thr Ser Glu Val Val Asp Val Ala Lys Leu
            2020                    2025                2030
Met Lys Ala Tyr Ile Ser Met Ile Val Lys Lys Arg Tyr Ser Thr Thr
            2035                    2040                2045
Arg Ser Ala Ser Ser Gln Gly Ser Ser Arg
    2050                    2055


        <210> 121
        <211> 461
        <212> PRT
        <213> Homo sapiens


        <400> 121
Met Glu Lys Lys Cys Thr Leu Tyr Phe Leu Val Leu Leu Pro Phe Phe
 1               5                    10                   15
Met Ile Leu Val Thr Ala Glu Leu Glu Glu Ser Pro Glu Asp Ser Ile
            20                   25                   30
Gln Leu Gly Val Thr Arg Asn Lys Ile Met Thr Ala Gln Tyr Glu Cys
        35                   40                   45
Tyr Gln Lys Ile Met Gln Asp Pro Ile Gln Gln Ala Glu Gly Val Tyr
    50                   55                   60
Cys Asn Arg Thr Trp Asp Gly Trp Leu Cys Trp Asn Asp Val Ala Ala
65                   70                   75                   80
Gly Thr Glu Ser Met Gln Leu Cys Pro Asp Tyr Phe Gln Asp Phe Asp
            85                   90                   95
Pro Ser Glu Lys Val Thr Lys Ile Cys Asp Gln Asp Gly Asn Trp Phe
            100                  105                  110
Arg His Pro Ala Ser Asn Arg Thr Trp Thr Asn Tyr Thr Gln Cys Asn
        115                  120                  125
Val Asn Thr His Glu Lys Val Lys Thr Ala Leu Asn Leu Phe Tyr Leu
        130                  135                  140
Thr Ile Ile Gly His Gly Leu Ser Ile Ala Ser Leu Leu Ile Ser Leu
145                  150   ·              155                  160
Gly Ile Phe Phe Tyr Phe Lys Ser Leu Ser Cys Gln Arg Ile Thr Leu
                165                  170                  175
His Lys Asn Leu Phe Phe Ser Phe Val Cys Asn Ser Val Val Thr Ile
            180                  185                  190
Ile His Leu Thr Ala Val Ala Asn Asn Gln Ala Leu Val Ala Thr Asn
        195                  200                  205
Pro Val Ser Cys Lys Val Ser Gln Phe Ile His Leu Tyr Leu Met Gly
    210                  215                  220
```

136

Cys Asn Tyr Phe Trp Met Leu Cys Glu Gly Ile Tyr Leu His Thr Leu
225   230   235   240
Ile Val Val Ala Val Phe Ala Glu Lys Gln His Leu Met Trp Tyr Tyr
                245   250   255
Phe Leu Gly Trp Gly Phe Pro Leu Ile Pro Ala Cys Ile His Ala Ile
                260   265   270
Ala Arg Ser Leu Tyr Tyr Asn Asp Asn Cys Trp Ile Ser Ser Asp Thr
                275   280   285
His Leu Leu Tyr Ile Ile His Gly Pro Ile Cys Ala Ala Leu Leu Val
                290   295   300
Asn Leu Phe Phe Leu Leu Asn Ile Val Arg Val Leu Ile Thr Lys Leu
305   310   315   320
Lys Val Thr His Gln Ala Glu Ser Asn Leu Tyr Met Lys Ala Val Arg
                325   330   335
Ala Thr Leu Ile Leu Val Pro Leu Leu Gly Ile Glu Phe Val Leu Ile
                340   345   350
Pro Trp Arg Pro Glu Gly Lys Ile Ala Glu Glu Val Tyr Asp Tyr Ile
                355   360   365
Met His Ile Leu Met His Phe Gln Gly Leu Leu Val Ser Thr Ile Phe
370   375   380
Cys Phe Phe Asn Gly Glu Val Gln Ala Ile Leu Arg Arg Asn Trp Asn
385   390   395   400
Gln Tyr Lys Ile Gln Phe Gly Asn Ser Phe Ser Asn Ser Glu Ala Leu
                405   410   415
Arg Ser Ala Ser Tyr Thr Val Ser Thr Ile Ser Asp Gly Pro Gly Tyr
                420   425   430
Ser His Asp Cys Pro Ser Glu His Leu Asn Gly Lys Ser Ile His Asp
                435   440   445
Ile Glu Asn Val Leu Leu Lys Pro Glu Asn Leu Tyr Asn
450   455   460

        <210> 122
        <211> 610
        <212> PRT
        <213> Homo sapiens

        <400> 122
Met Ile Ala Ser Gln Phe Leu Ser Ala Leu Thr Leu Val Leu Leu Ile
1   5   10   15
Lys Glu Ser Gly Ala Trp Ser Tyr Asn Thr Ser Thr Glu Ala Met Thr
                20   25   30
Tyr Asp Glu Ala Ser Ala Tyr Cys Gln Gln Arg Tyr Thr His Leu Val
        35   40   45
Ala Ile Gln Asn Lys Glu Glu Ile Glu Tyr Leu Asn Ser Ile Leu Ser
        50   55   60
Tyr Ser Pro Ser Tyr Tyr Trp Ile Gly Ile Arg Lys Val Asn Asn Val
65   70   75   80
Trp Val Trp Val Gly Thr Gln Lys Pro Leu Thr Glu Glu Ala Lys Asn
                85   90   95
Trp Ala Pro Gly Glu Pro Asn Asn Arg Gln Lys Asp Glu Asp Cys Val
                100   105   110
Glu Ile Tyr Ile Lys Arg Glu Lys Asp Val Gly Met Trp Asn Asp Glu
        115   120   125
Arg Cys Ser Lys Lys Lys Leu Ala Leu Cys Tyr Thr Ala Ala Cys Thr
        130   135   140
Asn Thr Ser Cys Ser Gly His Gly Glu Cys Val Glu Thr Ile Asn Asn
145   150   155   160
Tyr Thr Cys Lys Cys Asp Pro Gly Phe Ser Gly Leu Lys Cys Glu Gln
                165   170   175
Ile Val Asn Cys Thr Ala Leu Glu Ser Pro Glu His Gly Ser Leu Val
        180   185   190

137

```
Cys Ser His Pro Leu Gly Asn Phe Ser Tyr Asn Ser Ser Cys Ser Ile
        195                 200                 205
Ser Cys Asp Arg Gly Tyr Leu Pro Ser Ser Met Glu Thr Met Gln Cys
        210             215                 220
Met Ser Ser Gly Glu Trp Ser Ala Pro Ile Pro Ala Cys Asn Val Val
225                 230                 235                 240
Glu Cys Asp Ala Val Thr Asn Pro Ala Asn Gly Phe Val Glu Cys Phe
            245                 250                 255
Gln Asn Pro Gly Ser Phe Pro Trp Asn Thr Thr Cys Thr Phe Asp Cys
            260                 265                 270
Glu Glu Gly Phe Glu Leu Met Gly Ala Gln Ser Leu Gln Cys Thr Ser
        275                 280                 285
Ser Gly Asn Trp Asp Asn Glu Lys Pro Thr Cys Lys Ala Val Thr Cys
        290                 295                 300
Arg Ala Val Arg Gln Pro Gln Asn Gly Ser Val Arg Cys Ser His Ser
305                 310                 315                 320
Pro Ala Gly Glu Phe Thr Phe Lys Ser Ser Cys Asn Phe Thr Cys Glu
            325                 330                 335
Glu Gly Phe Met Leu Gln Gly Pro Ala Gln Val Glu Cys Thr Thr Gln
            340                 345                 350
Gly Gln Trp Thr Gln Gln Ile Pro Val Cys Glu Ala Phe Gln Cys Thr
        355                 360                 365
Ala Leu Ser Asn Pro Glu Arg Gly Tyr Met Asn Cys Leu Pro Ser Ala
        370                 375                 380
Ser Gly Ser Phe Arg Tyr Gly Ser Ser Cys Glu Phe Ser Cys Glu Gln
385                 390                 395                 400
Gly Phe Val Leu Lys Gly Ser Lys Arg Leu Gln Cys Gly Pro Thr Gly
            405                 410                 415
Glu Trp Asp Asn Glu Lys Pro Thr Cys Glu Ala Val Arg Cys Asp Ala
        420                 425                 430
Val His Gln Pro Pro Lys Gly Leu Val Arg Cys Ala His Ser Pro Ile
        435                 440                 445
Gly Glu Phe Thr Tyr Lys Ser Ser Cys Ala Phe Ser Cys Glu Glu Gly
        450                 455                 460
Phe Glu Leu Tyr Gly Ser Thr Gln Leu Glu Cys Thr Ser Gln Gly Gln
465                 470                 475                 480
Trp Thr Glu Glu Val Pro Ser Cys Gln Val Val Lys Cys Ser Ser Leu
            485                 490                 495
Ala Val Pro Gly Lys Ile Asn Met Ser Cys Ser Gly Glu Pro Val Phe
            500                 505                 510
Gly Thr Val Cys Lys Phe Ala Cys Pro Glu Gly Trp Thr Leu Asn Gly
        515                 520                 525
Ser Ala Ala Arg Thr Cys Gly Ala Thr Gly His Trp Ser Gly Leu Leu
        530                 535                 540
Pro Thr Cys Glu Ala Pro Thr Glu Ser Asn Ile Pro Leu Val Ala Gly
545                 550                 555                 560
Leu Ser Ala Ala Gly Leu Ser Leu Leu Thr Leu Ala Pro Phe Leu Leu
            565                 570                 575
Trp Leu Arg Lys Cys Leu Arg Lys Ala Lys Lys Phe Val Pro Ala Ser
        580                 585                 590
Ser Cys Gln Ser Leu Glu Ser Asp Gly Ser Tyr Gln Lys Pro Ser Tyr
        595                 600                 605
Ile Leu
610
```

<400> 123

```
Met Glu Gly Ile Ser Ile Tyr Thr Ser Asp Asn Tyr Thr Glu Glu Met
1               5                   10                  15
Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys Phe Arg Glu Glu
            20                  25                  30
Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile
        35                  40                  45
Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly
    50                  55                  60
Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu
65                  70                  75                  80
Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro Phe Trp Ala Val
            85                  90                  95
Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val
            100                 105                 110
His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val Leu Ile Leu Ala
            115                 120                 125
Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His Ala Thr Asn Ser
    130                 135                 140
Gln Arg Pro Arg Lys Leu Leu Ala Glu Lys Val Val Tyr Val Gly Val
145                 150                 155                 160
Trp Ile Pro Ala Leu Leu Leu Thr Ile Pro Asp Phe Ile Phe Ala Asn
            165                 170                 175
Val Ser Glu Ala Asp Asp Arg Tyr Ile Cys Asp Arg Phe Tyr Pro Asn
            180                 185                 190
Asp Leu Trp Val Val Val Phe Gln Phe Gln His Ile Met Val Gly Leu
            195                 200                 205
Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys Ile Ile Ile Ser
    210                 215                 220
Lys Leu Ser His Ser Lys Gly His Gln Lys Arg Lys Ala Leu Lys Thr
225                 230                 235                 240
Thr Val Ile Leu Ile Leu Ala Phe Phe Ala Cys Trp Leu Pro Tyr Tyr
            245                 250                 255
Ile Gly Ile Ser Ile Asp Ser Phe Ile Leu Leu Glu Ile Ile Lys Gln
            260                 265                 270
Gly Cys Glu Phe Glu Asn Thr Val His Lys Trp Ile Ser Ile Thr Glu
            275                 280                 285
Ala Leu Ala Phe Phe His Cys Cys Leu Asn Pro Ile Leu Tyr Ala Phe
    290                 295                 300
Leu Gly Ala Lys Phe Lys Thr Ser Ala Gln His Ala Leu Thr Ser Val
305                 310                 315                 320
Ser Arg Gly Ser Ser Leu Lys Ile Leu Ser Lys Gly Lys Arg Gly Gly
            325                 330                 335
His Ser Ser Val Ser Thr Glu Ser Glu Ser Ser Ser Phe His Ser Ser
            340                 345                 350
```

<210> 124
<211> 184
<212> PRT
<213> Homo sapiens

<400> 124

```
Met Lys Ser Val Leu Leu Leu Thr Thr Leu Leu Val Pro Ala His Leu
1               5                   10                  15
Val Ala Ala Trp Ser Asn Asn Tyr Ala Val Asp Cys Pro Gln His Cys
            20                  25                  30
Asp Ser Ser Glu Cys Lys Ser Ser Pro Arg Cys Lys Arg Thr Val Leu
        35                  40                  45
Asp Asp Cys Gly Cys Cys Arg Val Cys Ala Ala Gly Arg Gly Glu Thr
    50                  55                  60
```

139

Cys Tyr Arg Thr Val Ser Gly Met Asp Gly Met Lys Cys Gly Pro Gly
65   70   75   80
Leu Arg Cys Gln Pro Ser Asn Gly Glu Asp Pro Phe Gly Glu Glu Phe
            85   90   95
Gly Ile Cys Lys Asp Cys Pro Tyr Gly Thr Phe Gly Met Asp Cys Arg
            100   105   110
Glu Thr Cys Asn Cys Gln Ser Gly Ile Cys Asp Arg Gly Thr Gly Lys
            115   120   125
Cys Leu Lys Phe Pro Phe Phe Gln Tyr Ser Val Thr Lys Ser Ser Asn
    130   135   140
Arg Phe Val Ser Leu Thr Glu His Asp Met Ala Ser Gly Asp Gly Asn
145   150   155   160
Ile Val Arg Glu Glu Val Val Lys Glu Asn Ala Ala Gly Ser Pro Val
            165   170   175
Met Arg Lys Trp Leu Asn Pro Arg
            180

Ser Arg Pro Trp Trp Leu Arg Ala Ser Glu Arg Pro Ser Ala Pro Ser
1   5   10   15
Ala Met Ala Lys Arg Ser Arg Gly Pro Gly Arg Arg Cys Leu Leu Ala
            20   25   30
Leu Val Leu Phe Cys Ala Trp Gly Thr Leu Ala Val Val Ala Gln Lys
            35   40   45
Pro Gly Ala Gly Cys Pro Ser Arg Cys Leu Cys Phe Arg Thr Thr Val
            50   55   60
Arg Cys Met His Leu Leu Leu Glu Ala Val Pro Ala Val Ala Pro Gln
65   70   75   80
Thr Ser Ile Leu Asp Leu Arg Phe Asn Arg Ile Arg Glu Ile Gln Pro
            85   90   95
Gly Ala Phe Arg Arg Leu Arg Asn Leu Asn Thr Leu Leu Leu Asn Asn
            100   105   110
Asn Gln Ile Lys Arg Ile Pro Ser Gly Ala Phe Glu Asp Leu Glu Asn
            115   120   125
Leu Lys Tyr Leu Tyr Leu Tyr Lys Asn Glu Ile Gln Ser Ile Asp Arg
    130   135   140
Gln Ala Phe Lys Gly Leu Ala Ser Leu Glu Gln Leu Tyr Leu His Phe
145   150   155   160
Asn Gln Ile Glu Thr Leu Asp Pro Asp Ser Phe Gln His Leu Pro Lys
            165   170   175
Leu Glu Arg Leu Phe Leu His Asn Asn Arg Ile Thr His Leu Val Pro
            180   185   190
Gly Thr Phe Asn His Leu Glu Ser Met Lys Arg Leu Arg Leu Asp Ser
            195   200   205
Asn Thr Leu His Cys Asp Cys Glu Ile Leu Trp Leu Ala Asp Leu Leu
    210   215   220
Lys Thr Tyr Ala Glu Ser Gly Asn Ala Gln Ala Ala Ala Ile Cys Glu
225   230   235   240
Tyr Pro Arg Arg Ile Gln Gly Arg Ser Val Ala Thr Ile Thr Pro Glu
            245   250   255
Glu Leu Asn Cys Glu Arg Pro Arg Ile Thr Ser Glu Pro Gln Asp Ala
            260   265   270
Asp Val Thr Ser Gly Asn Thr Val Tyr Phe Thr Cys Arg Ala Glu Gly
            275   280   285
Asn Pro Lys Pro Glu Ile Ile Trp Leu Arg Asn Asn Asn Glu Leu Ser
    290   295   300

140

```
Met Lys Thr Asp Ser Arg Leu Asn Leu Leu Asp Asp Gly Thr Leu Met
305             310             315             320
Ile Gln Asn Thr Gln Glu Thr Asp Gln Gly Ile Tyr Gln Cys Met Ala
            325             330             335
Lys Asn Val Ala Gly Glu Val Lys Thr Gln Glu Val Thr Leu Arg Tyr
            340             345             350
Phe Gly Ser Pro Ala Arg Pro Thr Phe Val Ile Gln Pro Gln Asn Thr
            355             360             365
Glu Val Leu Val Gly Glu Ser Val Thr Leu Glu Cys Ser Ala Thr Gly
    370             375             380
His Pro Pro Pro Arg Ile Ser Trp Thr Arg Gly Asp Arg Thr Pro Leu
385             390             395             400
Pro Val Asp Pro Arg Val Asn Ile Thr Pro Ser Gly Gly Leu Tyr Ile
            405             410             415
Gln Asn Val Val Gln Gly Asp Ser Gly Glu Tyr Ala Cys Ser Ala Thr
            420             425             430
Asn Asn Ile Asp Ser Val His Ala Thr Ala Phe Ile Ile Val Gln Ala
            435             440             445
Leu Pro Gln Phe Thr Val Thr Pro Gln Asp Arg Val Val Ile Glu Gly
    450             455             460
Gln Thr Val Asp Phe Gln Cys Glu Ala Lys Gly Asn Pro Pro Pro Val
465             470             475             480
Ile Ala Trp Thr Lys Gly Gly Ser Gln Leu Ser Val Asp Arg Arg His
            485             490             495
Leu Val Leu Ser Ser Gly Thr Leu Arg Ile Ser Gly Val Ala Leu His
            500             505             510
Asp Gln Gly Gln Tyr Glu Cys Gln Ala Val Asn Ile Ile Gly Ser Gln
            515             520             525
Lys Val Val Ala His Leu Thr Val Gln Pro Arg Val Thr Pro Val Phe
    530             535             540
Ala Ser Ile Pro Ser Asp Thr Thr Val Glu Val Gly Ala Asn Val Gln
545             550             555             560
Leu Pro Cys Ser Ser Gln Gly Glu Pro Glu Pro Ala Ile Thr Trp Asn
            565             570             575
Lys Asp Gly Val Gln Val Thr Glu Ser Gly Lys Phe His Ile Ser Pro
            580             585             590
Glu Gly Phe Leu Thr Ile Asn Asp Val Gly Pro Ala Asp Ala Gly Arg
            595             600             605
Tyr Glu Cys Val Ala Arg Asn Thr Ile Gly Ser Ala Ser Val Ser Met
    610             615             620
Val Leu Ser Val Asn Val Pro Asp Val Ser Arg Asn Gly Asp Pro Phe
625             630             635             640
Val Ala Thr Ser Ile Val Glu Ala Ile Ala Thr Val Asp Arg Ala Ile
            645             650             655
Asn Ser Thr Arg Thr His Leu Phe Asp Ser Arg Pro Arg Ser Pro Asn
            660             665             670
Asp Leu Leu Ala Leu Phe Arg Tyr Pro Arg Asp Pro Tyr Thr Val Glu
            675             680             685
Gln Ala Arg Ala Gly Glu Ile Phe Glu Arg Thr Leu Gln Leu Ile Gln
    690             695             700
Glu His Val Gln His Gly Leu Met Val Asp Leu Asn Gly Thr Ser Tyr
705             710             715             720
His Tyr Asn Asp Leu Val Ser Pro Gln Tyr Leu Asn Leu Ile Ala Asn
            725             730             735
Leu Ser Gly Cys Thr Ala His Arg Arg Val Asn Asn Cys Ser Asp Met
            740             745             750
Cys Phe His Gln Lys Tyr Arg Thr His Asp Gly Thr Cys Asn Asn Leu
    755             760             765
Gln His Pro Met Trp Gly Ala Ser Leu Thr Ala Phe Glu Arg Leu Leu
    770             775             780
```

141

```
Lys Ser Val Tyr Glu Asn Gly Phe Asn Thr Pro Arg Gly Ile Asn Pro
785                 790                 795                 800
His Arg Leu Tyr Asn Gly His Ala Leu Pro Met Pro Arg Leu Val Ser
                805                 810                 815
Thr Thr Leu Ile Gly Thr Glu Thr Val Thr Pro Asp Glu Gln Phe Thr
                820                 825                 830
His Met Leu Met Gln Trp Gly Gln Phe Leu Asp His Asp Leu Asp Ser
            835                 840                 845
Thr Val Val Ala Leu Ser Gln Ala Arg Phe Ser Asp Gly Gln His Cys
        850                 855                 860
Ser Asn Val Cys Ser Asn Asp Pro Pro Cys Phe Ser Val Met Ile Pro
865                 870                 875                 880
Pro Asn Asp Ser Arg Ala Arg Ser Gly Ala Arg Cys Met Phe Phe Val
                885                 890                 895
Arg Ser Ser Pro Val Cys Gly Ser Gly Met Thr Ser Leu Leu Met Asn
            900                 905                 910
Ser Val Tyr Pro Arg Glu Gln Ile Asn Gln Leu Thr Ser Tyr Ile Asp
        915                 920                 925
Ala Ser Asn Val Tyr Gly Ser Thr Glu His Glu Ala Arg Ser Ile Arg
        930                 935                 940
Asp Leu Ala Ser His Arg Gly Leu Leu Arg Gln Gly Ile Val Gln Arg
945                 950                 955                 960
Ser Gly Lys Pro Leu Leu Pro Phe Ala Thr Gly Pro Pro Thr Glu Cys
                965                 970                 975
Met Arg Asp Glu Asn Glu Ser Pro Ile Pro Cys Phe Leu Ala Gly Asp
            980                 985                 990
His Arg Ala Asn Glu Gln Leu Gly Leu Thr Ser Met His Thr Leu Trp
            995                 1000                1005
Phe Arg Glu His Asn Arg Ile Ala Thr Glu Leu Leu Lys Leu Asn Pro
        1010                1015                1020
His Trp Asp Gly Asp Thr Ile Tyr Tyr Glu Thr Arg Lys Ile Val Gly
1025                1030                1035                1040
Ala Glu Ile Gln His Ile Thr Tyr Gln His Trp Leu Pro Lys Ile Leu
                1045                1050                1055
Gly Glu Val Gly Met Arg Thr Leu Gly Glu Tyr His Gly Tyr Asp Pro
            1060                1065                1070
Gly Ile Asn Ala Gly Ile Phe Asn Ala Phe Ala Thr Ala Ala Phe Arg
            1075                1080                1085
Phe Gly His Thr Leu Val Asn Pro Leu Leu Tyr Arg Leu Asp Glu Asn
        1090                1095                1100
Phe Gln Pro Ile Ala Gln Asp His Leu Pro Leu His Lys Ala Phe Phe
1105                1110                1115                1120
Ser Pro Phe Arg Ile Val Asn Glu Gly Gly Ile Asp Pro Leu Leu Arg
                1125                1130                1135
Gly Leu Phe Gly Val Ala Gly Lys Met Arg Val Pro Ser Gln Leu Leu
            1140                1145                1150
Asn Thr Glu Leu Thr Glu Arg Leu Phe Ser Met Ala His Thr Val Ala
            1155                1160                1165
Leu Asp Leu Ala Ala Ile Asn Ile Gln Arg Gly Arg Asp His Gly Ile
        1170                1175                1180
Pro Pro Tyr His Asp Tyr Arg Val Tyr Cys Asn Leu Ser Ala Ala His
1185                1190                1195                1200
Thr Phe Glu Asp Leu Lys Asn Glu Ile Lys Asn Pro Glu Ile Arg Glu
                1205                1210                1215
Lys Leu Lys Arg Leu Tyr Gly Ser Thr Leu Asn Ile Asp Leu Phe Pro
            1220                1225                1230
Ala Leu Val Val Glu Asp Leu Val Pro Gly Ser Arg Leu Gly Pro Thr
            1235                1240                1245
Leu Met Cys Leu Leu Ser Thr Gln Phe Lys Arg Leu Arg Asp Gly Asp
        1250                1255                1260
```

142

```
Arg Leu Trp Tyr Glu Asn Pro Gly Val Phe Ser Pro Ala Gln Leu Thr
1265                1270            1275                1280
Gln Ile Lys Gln Thr Ser Leu Ala Arg Ile Leu Cys Asp Asn Ala Asp
                1285            1290            1295
Asn Ile Thr Arg Val Gln Ser Asp Val Phe Arg Val Ala Glu Phe Pro
            1300            1305            1310
His Gly Tyr Gly Ser Cys Asp Glu Ile Pro Arg Val Asp Leu Arg Val
        1315            1320            1325
Trp Gln Asp Cys Cys Glu Asp Cys Arg Thr Arg Gly Gln Phe Asn Ala
    1330            1335            1340
Phe Ser Tyr His Phe Arg Gly Arg Arg Ser Leu Glu Phe Ser Tyr Gln
1345            1350            1355            1360
Glu Asp Lys Pro Thr Lys Lys Thr Arg Pro Arg Lys Ile Pro Ser Val
            1365            1370            1375
Gly Arg Gln Gly Glu His Leu Ser Asn Ser Thr Ser Ala Phe Ser Thr
        1380            1385            1390
Arg Ser Asp Ala Ser Gly Thr Asn Asp Phe Arg Glu Phe Val Leu Glu
        1395            1400            1405
Met Gln Lys Thr Ile Thr Asp Leu Arg Thr Gln Ile Lys Lys Leu Glu
        1410            1415            1420
Ser Arg Leu Ser Thr Thr Glu Cys Val Asp Ala Gly Gly Glu Ser His
1425            1430            1435            1440
Ala Asn Asn Thr Lys Trp Lys Lys Asp Ala Cys Thr Ile Cys Glu Cys
            1445            1450            1455
Lys Asp Gly Gln Val Thr Cys Phe Val Glu Ala Cys Pro Pro Ala Thr
        1460            1465            1470
Cys Ala Val Pro Val Asn Ile Pro Gly Ala Cys Cys Pro Val Cys Leu
        1475            1480            1485
Gln Lys Arg Ala Glu Glu Lys Pro
    1490            1495


    <210> 126
    <211> 1165
    <212> PRT
    <213> Homo sapiens


    <400> 126
Met Ala Asn Asp Ser Pro Ala Lys Ser Leu Val Asp Ile Asp Leu Ser
 1            5               10              15
Ser Leu Arg Asp Pro Ala Gly Ile Phe Glu Leu Val Glu Val Val Gly
            20              25              30
Asn Gly Thr Tyr Gly Gln Val Tyr Lys Gly Arg His Val Lys Thr Gly
        35              40              45
Gln Leu Ala Ala Ile Lys Val Met Asp Val Thr Glu Asp Glu Glu Glu
    50              55              60
Glu Ile Lys Leu Glu Ile Asn Met Leu Lys Lys Tyr Ser His His Arg
65              70              75              80
Asn Ile Ala Thr Tyr Tyr Gly Ala Phe Ile Lys Lys Ser Pro Pro Gly
            85              90              95
His Asp Asp Gln Leu Trp Leu Val Met Glu Phe Cys Gly Ala Gly Ser
            100             105             110
Ile Thr Asp Leu Val Lys Asn Thr Lys Gly Asn Thr Leu Lys Glu Asp
        115             120             125
Trp Ile Ala Tyr Ile Ser Arg Glu Ile Leu Arg Gly Leu Ala His Leu
    130             135             140
His Ile His His Val Ile His Arg Asp Ile Lys Gly Gln Asn Val Leu
145             150             155             160
Leu Thr Glu Asn Ala Glu Val Lys Leu Val Asp Phe Gly Val Ser Ala
            165             170             175
Gln Leu Asp Arg Thr Val Gly Arg Arg Asn Thr Phe Ile Gly Thr Pro
        180             185             190
```

143

```
Tyr Trp Met Ala Pro Glu Val Ile Ala Cys Asp Glu Asn Pro Asp Ala
    195                 200             205
Thr Tyr Asp Tyr Arg Ser Asp Leu Trp Ser Cys Gly Ile Thr Ala Ile
    210                 215             220
Glu Met Ala Glu Gly Ala Pro Pro Leu Cys Asp Met His Pro Met Arg
225                 230             235                 240
Ala Leu Phe Leu Ile Pro Arg Asn Pro Pro Arg Leu Lys Ser Lys
            245                 250             255
Lys Trp Ser Lys Lys Phe Phe Ser Phe Ile Glu Gly Cys Leu Val Lys
        260                 265                 270
Asn Tyr Met Gln Arg Pro Ser Thr Glu Gln Leu Leu Lys His Pro Phe
        275                 280                 285
Ile Arg Asp Gln Pro Asn Glu Arg Gln Val Arg Ile Gln Leu Lys Asp
    290                 295                 300
His Ile Asp Arg Thr Arg Lys Lys Arg Gly Glu Lys Asp Glu Thr Glu
305                 310                 315                 320
Tyr Glu Tyr Ser Gly Ser Glu Glu Glu Glu Glu Glu Val Pro Glu Gln
            325                 330                 335
Glu Gly Glu Pro Ser Ser Ile Val Asn Val Pro Gly Glu Ser Thr Leu
            340                 345                 350
Arg Arg Asp Phe Leu Arg Leu Gln Gln Glu Asn Lys Glu Arg Ser Glu
        355                 360                 365
Ala Leu Arg Arg Gln Gln Leu Leu Gln Glu Gln Gln Leu Arg Glu Gln
    370                 375                 380
Glu Glu Tyr Lys Arg Gln Leu Leu Ala Glu Arg Gln Lys Arg Ile Glu
385                 390                 395                 400
Gln Gln Lys Glu Gln Arg Arg Arg Leu Glu Glu Gln Gln Arg Arg Glu
            405                 410                 415
Arg Glu Ala Arg Arg Gln Gln Glu Arg Glu Gln Arg Arg Arg Glu Gln
        420                 425                 430
Glu Glu Lys Arg Arg Leu Glu Glu Leu Glu Arg Arg Arg Lys Glu Glu
        435                 440                 445
Glu Glu Arg Arg Arg Ala Glu Glu Glu Lys Arg Arg Val Glu Arg Glu
    450                 455                 460
Gln Glu Tyr Ile Arg Arg Gln Leu Glu Glu Glu Gln Arg His Leu Glu
465                 470                 475                 480
Val Leu Gln Gln Gln Leu Leu Gln Glu Gln Ala Met Leu Leu His Asp
            485                 490                 495
His Arg Arg Pro His Pro Gln His Ser Gln Gln Pro Pro Pro Pro Gln
        500                 505                 510
Gln Glu Arg Ser Lys Pro Ser Phe His Ala Pro Glu Pro Lys Ala His
        515                 520                 525
Tyr Glu Pro Ala Asp Arg Ala Arg Glu Val Pro Val Arg Thr Thr Ser
    530                 535                 540
Arg Ser Pro Val Leu Ser Arg Arg Asp Ser Pro Leu Gln Gly Ser Gly
545                 550                 555                 560
Gln Gln Asn Ser Gln Ala Gly Gln Arg Asn Ser Thr Ser Ile Glu Pro
            565                 570                 575
Arg Leu Leu Trp Glu Arg Val Glu Lys Leu Val Pro Arg Pro Gly Ser
        580                 585                 590
Gly Ser Ser Ser Gly Ser Ser Asn Ser Gly Ser Gln Pro Gly Ser His
        595                 600                 605
Pro Gly Ser Gln Ser Gly Ser Gly Glu Arg Phe Arg Val Arg Ser Ser
    610                 615                 620
Ser Lys Ser Glu Gly Ser Pro Ser Gln Arg Leu Glu Asn Ala Val Lys
625                 630                 635                 640
Lys Pro Glu Asp Lys Lys Glu Val Phe Arg Pro Leu Lys Pro Ala Gly
            645                 650                 655
Glu Val Asp Leu Thr Ala Leu Ala Lys Glu Leu Arg Ala Val Glu Asp
            660                 665                 670
```

144

```
Val Arg Pro Pro His Lys Val Thr Asp Tyr Ser Ser Ser Ser Glu Glu
        675                 680             685
Ser Gly Thr Thr Asp Glu Glu Asp Asp Asp Val Glu Gln Glu Gly Ala
        690                 695             700
Asp Glu Ser Thr Ser Gly Pro Glu Asp Thr Arg Ala Ala Ser Ser Leu
705                 710                 715                 720
Asn Leu Ser Asn Gly Glu Thr Glu Ser Val Lys Thr Met Ile Val His
                725                 730             735
Asp Asp Val Glu Ser Glu Pro Ala Met Thr Pro Ser Lys Glu Gly Thr
            740             745                 750
Leu Ile Val Arg Gln Thr Gln Ser Ala Ser Ser Thr Leu Gln Lys His
            755                 760             765
Lys Ser Ser Ser Ser Phe Thr Pro Phe Ile Asp Pro Arg Leu Leu Gln
        770             775             780
Ile Ser Pro Ser Ser Gly Thr Thr Val Thr Ser Val Val Gly Phe Ser
785                 790                 795                 800
Cys Asp Gly Met Arg Pro Glu Ala Ile Arg Gln Asp Pro Thr Arg Lys
                805             810             815
Gly Ser Val Val Asn Val Asn Pro Thr Asn Thr Arg Pro Gln Ser Asp
            820                 825             830
Thr Pro Glu Ile Arg Lys Tyr Lys Lys Arg Phe Asn Ser Glu Ile Leu
        835                 840             845
Cys Ala Ala Leu Trp Gly Val Asn Leu Leu Val Gly Thr Glu Ser Gly
        850                 855             860
Leu Met Leu Leu Asp Arg Ser Gly Gln Gly Lys Val Tyr Pro Leu Ile
865                 870                 875                 880
Asn Arg Arg Arg Phe Gln Gln Met Asp Val Leu Glu Gly Leu Asn Val
                885                 890             895
Leu Val Thr Ile Ser Gly Lys Lys Asp Lys Leu Arg Val Tyr Tyr Leu
            900             905                 910
Ser Trp Leu Arg Asn Lys Ile Leu His Asn Asp Pro Glu Val Glu Lys
        915                 920             925
Lys Gln Gly Trp Thr Thr Val Gly Asp Leu Glu Gly Cys Val His Tyr
        930                 935             940
Lys Val Val Lys Tyr Glu Arg Ile Lys Phe Leu Val Ile Ala Leu Lys
945                 950                 955                 960
Ser Ser Val Glu Val Tyr Ala Trp Ala Pro Lys Pro Tyr His Lys Phe
                965                 970                 975
Met Ala Phe Lys Ser Phe Gly Glu Leu Val His Lys Pro Leu Leu Val
            980             985                 990
Asp Leu Thr Val Glu Glu Gly Gln Arg Leu Lys Val Ile Tyr Gly Ser
        995                 1000                1005
Cys Ala Gly Phe His Ala Val Asp Val Asp Ser Gly Ser Val Tyr Asp
        1010                1015                1020
Ile Tyr Leu Pro Thr His Val Arg Lys Asn Pro His Ser Met Ile Gln
1025                1030                1035                1040
Cys Ser Ile Lys Pro His Ala Ile Ile Ile Leu Pro Asn Thr Asp Gly
                1045                1050                1055
Met Glu Leu Leu Val Cys Tyr Glu Asp Glu Gly Val Tyr Val Asn Thr
            1060                1065                1070
Tyr Gly Arg Ile Thr Lys Asp Val Val Leu Gln Trp Gly Glu Met Pro
        1075                1080                1085
Thr Ser Val Ala Tyr Ile Arg Ser Asn Gln Thr Met Gly Trp Gly Glu
        1090                1095                1100
Lys Ala Ile Glu Ile Arg Ser Val Glu Thr Gly His Leu Asp Gly Val
1105                1110                1115                1120
Phe Met His Lys Arg Ala Gln Arg Leu Lys Phe Leu Cys Glu Arg Asn
                1125                1130                1135
Asp Lys Val Phe Phe Ala Ser Val Arg Ser Gly Gly Ser Ser Gln Val
            1140                1145                1150
```

145

Tyr Phe Met Thr Leu Gly Arg Thr Ser Leu Leu Ser Trp
    1155   1160   1165

<210> 127
<211> 541
<212> PRT
<213> Homo sapiens

<400> 127

Met Gly Ser Ser Glu Val Ser Ile Ile Pro Gly Leu Gln Lys Glu Glu
1   5   10   15

Lys Ala Ala Val Glu Arg Arg Arg Leu His Val Leu Lys Ala Leu Lys
        20   25   30

Lys Leu Arg Ile Glu Ala Asp Glu Ala Pro Val Val Ala Val Leu Gly
        35   40   45

Ser Gly Gly Gly Leu Arg Ala His Ile Ala Cys Leu Gly Val Leu Ser
        50   55   60

Glu Met Lys Glu Gln Gly Leu Leu Asp Ala Val Thr Tyr Leu Ala Gly
65   70   75   80

Val Ser Gly Ser Thr Trp Ala Ile Ser Ser Leu Tyr Thr Asn Asp Gly
        85   90   95

Asp Met Glu Ala Leu Glu Ala Asp Leu Lys His Arg Phe Thr Arg Gln
        100   105   110

Glu Trp Asp Leu Ala Lys Ser Leu Gln Lys Thr Ile Gln Ala Ala Arg
        115   120   125

Ser Glu Asn Tyr Ser Leu Thr Asp Phe Trp Ala Tyr Met Val Ile Ser
        130   135   140

Lys Gln Thr Arg Glu Leu Pro Glu Ser His Leu Ser Asn Met Lys Lys
145   150   155   160

Pro Val Glu Glu Gly Thr Leu Pro Tyr Pro Ile Phe Ala Ala Ile Asp
           165   170   175

Asn Asp Leu Gln Pro Ser Trp Gln Glu Ala Arg Ala Pro Glu Thr Trp
        180   185   190

Phe Glu Phe Thr Pro His His Ala Gly Phe Ser Ala Leu Gly Ala Phe
        195   200   205

Val Ser Ile Thr His Phe Gly Ser Lys Phe Lys Lys Gly Arg Leu Val
        210   215   220

Arg Thr His Pro Glu Arg Asp Leu Thr Phe Leu Arg Gly Leu Trp Gly
225   230   235   240

Ser Ala Leu Gly Asn Thr Glu Val Ile Arg Glu Tyr Ile Phe Asp Gln
        245   250   255

Leu Arg Asn Leu Thr Leu Lys Gly Leu Trp Arg Arg Ala Val Ala Asn
        260   265   270

Ala Lys Ser Ile Gly His Leu Ile Phe Ala Arg Leu Leu Arg Leu Gln
        275   280   285

Glu Ser Ser Gln Gly Glu His Pro Pro Glu Asp Glu Gly Gly Glu
        290   295   300

Pro Glu His Thr Trp Leu Thr Glu Met Leu Glu Asn Trp Thr Arg Thr
305   310   315   320

Ser Leu Glu Lys Gln Glu Gln Pro His Glu Asp Pro Glu Arg Lys Gly
        325   330   335

Ser Leu Ser Asn Leu Met Asp Phe Val Lys Lys Thr Gly Ile Cys Ala
        340   345   350

Ser Lys Trp Glu Trp Gly Thr Thr His Asn Phe Leu Tyr Lys His Gly
        355   360   365

Gly Ile Arg Asp Lys Ile Met Ser Ser Arg Lys His Leu His Leu Val
        370   375   380

Asp Ala Gly Leu Ala Ile Asn Thr Pro Phe Pro Leu Val Leu Pro Pro
385   390   395   400

Thr Arg Glu Val His Leu Ile Leu Ser Phe Asp Phe Ser Ala Gly Asp
           405   410   415

```
Pro Phe Glu Thr Ile Arg Ala Thr Thr Asp Tyr Cys Arg Arg His Lys
            420                 425                 430
Ile Pro Phe Pro Gln Val Glu Glu Ala Glu Leu Asp Leu Trp Ser Lys
            435                 440                 445
Ala Pro Ala Ser Cys Tyr Ile Leu Lys Gly Glu Thr Gly Pro Val Val
            450                 455                 460
Ile His Phe Pro Leu Phe Asn Ile Asp Ala Cys Gly Gly Asp Ile Glu
465                 470                 475                 480
Ala Trp Ser Asp Thr Tyr Asp Thr Phe Lys Leu Ala Asp Thr Tyr Thr
                485                 490                 495
Leu Asp Val Val Val Leu Leu Leu Ala Leu Ala Lys Lys Asn Val Arg
                500                 505                 510
Glu Asn Lys Lys Lys Ile Leu Arg Glu Leu Met Asn Val Ala Gly Leu
            515                 520                 525
Tyr Tyr Pro Lys Asp Ser Ala Arg Ser Cys Cys Leu Ala
            530                 535                 540


        <210> 128
        <211> 411
        <212> PRT
        <213> Homo sapiens


        <400> 128
Met Gln Cys Ser Trp Lys Ala Val Leu Leu Leu Ala Leu Ala Ser Ile
  1             5                  10                  15
Ala Ile Gln Tyr Thr Ala Ile Arg Thr Phe Thr Ala Lys Ser Phe His
            20                  25                  30
Thr Cys Pro Gly Leu Ala Glu Ala Gly Leu Ala Glu Arg Leu Cys Glu
            35                  40                  45
Glu Ser Pro Thr Phe Ala Tyr Asn Leu Ser Arg Lys Thr His Ile Leu
            50                  55                  60
Ile Leu Ala Thr Thr Arg Ser Gly Ser Ser Phe Val Gly Gln Leu Phe
65                  70                  75                  80
Asn Gln His Leu Asp Val Phe Tyr Leu Phe Glu Pro Leu Tyr His Val
                85                  90                  95
Gln Asn Thr Leu Ile Pro Arg Phe Thr Gln Gly Lys Ser Pro Ala Asp
            100                 105                 110
Arg Arg Val Met Leu Gly Ala Ser Arg Asp Leu Leu Arg Ser Leu Tyr
            115                 120                 125
Asp Cys Asp Leu Tyr Phe Leu Glu Asn Tyr Ile Lys Pro Pro Pro Val
            130                 135                 140
Asn His Thr Thr Asp Arg Ile Phe Arg Arg Gly Ala Ser Arg Val Leu
145                 150                 155                 160
Cys Ser Arg Pro Val Cys Asp Pro Pro Gly Pro Ala Asp Leu Val Leu
                165                 170                 175
Glu Glu Gly Asp Cys Val Arg Lys Cys Gly Leu Leu Asn Leu Thr Val
                180                 185                 190
Ala Ala Glu Ala Cys Arg Glu Arg Ser His Val Ala Ile Lys Thr Val
            195                 200                 205
Arg Val Pro Glu Val Asn Asp Leu Arg Ala Leu Val Glu Asp Pro Arg
            210                 215                 220
Leu Asn Leu Lys Val Ile Gln Leu Val Arg Asp Pro Arg Gly Ile Leu
225                 230                 235                 240
Ala Ser Arg Ser Glu Thr Phe Arg Asp Thr Tyr Arg Leu Trp Arg Leu
                245                 250                 255
Trp Tyr Gly Thr Gly Arg Lys Pro Tyr Asn Leu Asp Val Thr Gln Leu
                260                 265                 270
Thr Thr Val Cys Glu Asp Phe Ser Asn Ser Val Ser Thr Gly Leu Met
            275                 280                 285
Arg Pro Pro Trp Leu Lys Gly Lys Tyr Met Leu Val Arg Tyr Glu Asp
            290                 295                 300
```

```
Leu Ala Arg Asn Pro Met Lys Lys Thr Glu Glu Ile Tyr Gly Phe Leu
305                 310                 315                 320
Gly Ile Pro Leu Asp Ser His Val Ala Arg Trp Ile Gln Asn Asn Thr
                325                 330                 335
Arg Gly Asp Pro Thr Leu Gly Lys His Lys Tyr Gly Thr Val Arg Asn
                340                 345                 350
Ser Ala Ala Thr Ala Glu Lys Trp Arg Phe Arg Leu Ser Tyr Asp Ile
        355                 360                 365
Val Ala Phe Ala Gln Asn Ala Cys Gln Gln Val Leu Ala Gln Leu Gly
    370                 375                 380
Tyr Lys Ile Ala Ala Ser Glu Glu Glu Leu Lys Asn Pro Ser Val Ser
385                 390                 395                 400
Leu Val Glu Glu Arg Asp Phe Arg Pro Phe Ser
                405                 410
```

        <210> 129
        <211> 1228
        <212> PRT
        <213> Homo sapiens

        <400> 129

```
Met Lys Gly Ala Arg Leu Phe Val Leu Leu Ser Ser Leu Trp Ser Gly
    1               5                   10                  15
Gly Ile Gly Leu Asn Asn Ser Lys His Ser Trp Thr Ile Pro Glu Asp
                20                  25                  30
Gly Asn Ser Gln Lys Thr Met Pro Ser Ala Ser Val Pro Pro Asn Lys
            35                  40                  45
Ile Gln Ser Leu Gln Ile Leu Pro Thr Thr Arg Val Met Ser Ala Glu
        50                  55                  60
Ile Ala Thr Thr Pro Glu Ala Arg Thr Ser Glu Asp Ser Leu Leu Lys
65                  70                  75                  80
Ser Thr Leu Pro Pro Ser Glu Thr Ser Ala Pro Ala Glu Gly Val Arg
                85                  90                  95
Asn Gln Thr Leu Thr Ser Thr Glu Lys Ala Glu Gly Val Val Lys Leu
            100                 105                 110
Gln Asn Leu Thr Leu Pro Thr Asn Ala Ser Ile Lys Phe Asn Pro Gly
        115                 120                 125
Ala Glu Ser Val Val Leu Ser Asn Ser Thr Leu Lys Phe Leu Gln Ser
    130                 135                 140
Phe Ala Arg Lys Ser Asn Glu Gln Ala Thr Ser Leu Asn Thr Val Gly
145                 150                 155                 160
Gly Thr Gly Gly Ile Gly Gly Val Gly Gly Thr Gly Gly Val Gly Asn
                165                 170                 175
Arg Ala Pro Arg Glu Thr Tyr Leu Ser Arg Gly Asp Ser Ser Ser Ser
            180                 185                 190
Gln Arg Thr Asp Tyr Gln Lys Ser Asn Phe Glu Thr Thr Arg Gly Lys
        195                 200                 205
Asn Trp Cys Ala Tyr Val His Thr Arg Leu Ser Pro Thr Val Thr Leu
    210                 215                 220
Asp Asn Gln Val Thr Tyr Val Pro Gly Gly Lys Gly Pro Cys Gly Trp
225                 230                 235                 240
Thr Gly Gly Ser Cys Pro Gln Arg Ser Gln Lys Ile Ser Asn Pro Val
                245                 250                 255
Tyr Arg Met Gln His Lys Ile Val Thr Ser Leu Asp Trp Arg Cys Cys
            260                 265                 270
Pro Gly Tyr Ser Gly Pro Lys Cys Gln Leu Arg Ala Gln Glu Gln Gln
            275                 280                 285
Ser Leu Ile His Thr Asn Gln Ala Glu Ser His Thr Ala Val Gly Arg
        290                 295                 300
Gly Val Ala Glu Gln Gln Gln Gln Gln Gly Cys Gly Asp Pro Glu Val
305                 310                 315                 320
```

148

```
Met Gln Lys Met Thr Asp Gln Val Asn Tyr Gln Ala Met Lys Leu Thr
                325                 330             335
Leu Leu Gln Lys Lys Ile Asp Asn Ile Ser Leu Thr Val Asn Asp Val
            340                 345             350
Arg Asn Thr Tyr Ser Ser Leu Glu Gly Lys Val Ser Glu Asp Lys Ser
        355                 360             365
Arg Glu Phe Gln Ser Leu Leu Lys Gly Leu Lys Ser Lys Ser Ile Asn
    370                 375             380
Val Leu Ile Arg Asp Ile Val Arg Glu Gln Phe Lys Ile Phe Gln Asn
385                 390             395                 400
Asp Met Gln Glu Thr Val Ala Gln Leu Phe Lys Thr Val Ser Ser Leu
            405             410             415
Ser Glu Asp Leu Glu Ser Thr Arg Gln Ile Ile Gln Lys Val Asn Glu
            420             425             430
Ser Val Val Ser Ile Ala Ala Gln Gln Lys Phe Val Leu Val Gln Glu
            435             440             445
Asn Arg Pro Thr Leu Thr Asp Ile Val Glu Leu Arg Asn His Ile Val
    450                 455             460
Asn Val Arg Gln Glu Met Thr Leu Thr Cys Glu Lys Pro Ile Lys Glu
465                 470             475                 480
Leu Glu Val Lys Gln Thr His Leu Glu Gly Ala Leu Glu Gln Glu His
            485             490             495
Ser Arg Ser Ile Leu Tyr Tyr Glu Ser Leu Asn Lys Thr Leu Ser Lys
        500             505             510
Leu Lys Glu Val His Glu Gln Leu Leu Ser Thr Glu Gln Val Ser Asp
        515             520             525
Gln Lys Asn Ala Pro Ala Ala Glu Ser Val Ser Asn Asn Val Thr Glu
    530             535             540
Tyr Met Ser Thr Leu His Glu Asn Ile Lys Lys Gln Ser Leu Met Met
545             550             555                 560
Leu Gln Met Phe Glu Asp Leu His Ile Gln Glu Ser Lys Ile Asn Asn
            565             570             575
Leu Thr Val Ser Leu Glu Met Glu Lys Glu Ser Leu Arg Gly Glu Cys
            580             585             590
Glu Asp Met Leu Ser Lys Cys Arg Asn Asp Phe Lys Phe Gln Leu Lys
    595             600             605
Asp Thr Glu Glu Asn Leu His Val Leu Asn Gln Thr Leu Ala Glu Val
    610             615             620
Leu Phe Pro Met Asp Asn Lys Met Asp Lys Met Ser Glu Gln Leu Asn
625             630             635                 640
Asp Leu Thr Tyr Asp Met Glu Ile Leu Gln Pro Leu Leu Glu Gln Gly
            645             650             655
Ala Ser Leu Arg Gln Thr Met Thr Tyr Glu Gln Pro Lys Glu Ala Ile
        660             665             670
Val Ile Arg Lys Lys Ile Glu Asn Leu Thr Ser Ala Val Asn Ser Leu
        675             680             685
Asn Phe Ile Ile Lys Glu Leu Thr Lys Arg His Asn Leu Leu Arg Asn
    690             695             700
Glu Val Gln Gly Arg Asp Asp Ala Leu Glu Arg Arg Ile Asn Glu Tyr
705             710             715                 720
Ala Leu Glu Met Glu Asp Gly Leu Asn Lys Thr Met Thr Ile Ile Asn
            725             730             735
Asn Ala Ile Asp Phe Ile Gln Asp Asn Tyr Ala Leu Lys Glu Thr Leu
        740             745             750
Ser Thr Ile Lys Asp Asn Ser Glu Ile His His Lys Cys Thr Ser Asp
        755             760             765
Met Glu Thr Ile Leu Thr Phe Ile Pro Gln Phe His Arg Leu Asn Asp
    770             775             780
Ser Ile Gln Thr Leu Val Asn Asp Asn Gln Arg Tyr Asn Phe Val Leu
785                 790             795                 800
```

149

```
Gln Val Ala Lys Thr Leu Ala Gly Ile Pro Arg Asp Glu Lys Leu Asn
              805                 810                 815
Gln Ser Asn Phe Gln Lys Met Tyr Gln Met Phe Asn Glu Thr Thr Ser
              820                 825                 830
Gln Val Arg Lys Tyr Gln Gln Asn Met Ser His Leu Glu Glu Lys Leu
              835                 840                 845
Leu Leu Thr Thr Lys Ile Ser Lys Asn Phe Glu Thr Arg Leu Gln Asp
              850                 855                 860
Ile Glu Ser Lys Val Thr Gln Thr Leu Ile Pro Tyr Tyr Ile Ser Val
865                 870                 875                 880
Lys Lys Gly Ser Val Val Thr Asn Glu Arg Asp Gln Ala Leu Gln Leu
                  885                 890                 895
Gln Val Leu Asn Ser Arg Phe Lys Ala Leu Glu Ala Lys Ser Ile His
              900                 905                 910
Leu Ser Ile Asn Phe Phe Ser Leu Asn Lys Thr Leu His Glu Val Leu
              915                 920                 925
Thr Met Cys His Asn Ala Ser Thr Ser Val Ser Glu Leu Asn Ala Thr
              930                 935                 940
Ile Pro Lys Trp Ile Lys His Ser Leu Pro Asp Ile Gln Leu Leu Gln
945                 950                 955                 960
Lys Gly Leu Thr Glu Phe Val Glu Pro Ile Ile Gln Ile Lys Thr Gln
                  965                 970                 975
Ala Ala Leu Ser Asn Ser Thr Cys Cys Ile Asp Arg Ser Leu Pro Gly
                  980                 985                 990
Ser Leu Ala Asn Val Val Lys Ser Gln Lys Gln Val Lys Ser Leu Pro
                  995                 1000                1005
Lys Lys Ile Asn Ala Leu Lys Lys Pro Thr Val Asn Leu Thr Thr Val
              1010                1015                1020
Leu Ile Gly Arg Thr Gln Arg Asn Thr Asp Asn Ile Ile Tyr Pro Glu
1025                1030                1035                1040
Glu Tyr Ser Ser Cys Ser Arg His Pro Cys Gln Asn Gly Gly Thr Cys
                  1045                1050                1055
Ile Asn Gly Arg Thr Ser Phe Thr Cys Ala Cys Arg His Pro Phe Thr
                  1060                1065                1070
Gly Asp Asn Cys Thr Ile Lys Leu Val Glu Glu Asn Ala Leu Ala Pro
                  1075                1080                1085
Asp Phe Ser Lys Gly Ser Tyr Arg Tyr Ala Pro Met Val Ala Phe Phe
                  1090                1095                1100
Ala Ser His Thr Tyr Gly Met Thr Ile Pro Gly Pro Ile Leu Phe Asn
1105                1110                1115                1120
Asn Leu Asp Val Asn Tyr Gly Ala Ser Tyr Thr Pro Arg Thr Gly Lys
                  1125                1130                1135
Phe Arg Ile Pro Tyr Leu Gly Val Tyr Val Phe Lys Tyr Thr Ile Glu
                  1140                1145                1150
Ser Phe Ser Ala His Ile Ser Gly Phe Leu Val Val Asp Gly Ile Asp
                  1155                1160                1165
Lys Leu Ala Phe Glu Ser Glu Asn Ile Asn Ser Glu Ile His Cys Asp
                  1170                1175                1180
Arg Val Leu Thr Gly Asp Ala Leu Leu Glu Leu Asn Tyr Gly Gln Glu
1185                1190                1195                1200
Val Trp Leu Arg Leu Ala Lys Gly Thr Ile Pro Ala Lys Phe Pro Pro
                  1205                1210                1215
Val Thr Thr Phe Ser Gly Tyr Leu Leu Tyr Arg Thr
                  1220                1225
```

<210> 130
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> adhesive motif

<400> 130
Arg Gly Asp Ser
 1

<210> 131
<211> 149
<212> PRT
<213> Homo sapiens

<400> 131
Val Ala Ala Arg Pro Pro Val Ser Arg Met Glu Pro Arg Ala Ala Asp
 1   5   10   15
Gly Cys Phe Leu Gly Asp Val Gly Phe Trp Val Glu Arg Thr Pro Val
                20   25   30
His Glu Ala Ala Gln Arg Gly Glu Ser Leu Gln Leu Gln Gln Leu Ile
            35   40   45
Glu Ser Gly Ala Cys Val Asn Gln Val Thr Val Asp Ser Ile Thr Pro
        50   55   60
Leu His Ala Ala Ser Leu Gln Gly Gln Ala Arg Cys Val Gln Leu Leu
65   70   75   80
Leu Ala Ala Gly Ala Gln Val Asp Ala Arg Asn Ile Asp Gly Ser Thr
                85   90   95
Pro Leu Cys Asp Ala Cys Ala Ser Gly Ser Ile Glu Cys Val Lys Leu
            100   105   110
Leu Leu Ser Tyr Gly Ala Lys Val Asn Pro Pro Leu Tyr Thr Ala Ser
            115   120   125
Pro Leu His Glu Ala Ser Phe Pro Arg Leu Leu Ser Thr Leu Ala Ser
        130   135   140
Thr Pro Trp Ile Asn
145

<210> 132
<211> 206
<212> PRT
<213> Homo sapiens

<400> 132
Met Ala Ala Asn Lys Pro Lys Gly Gln Asn Ser Leu Ala Leu His Lys
 1   5   10   15
Val Ile Met Val Gly Ser Gly Gly Val Gly Lys Ser Ala Leu Thr Leu
                20   25   30
Gln Phe Met Tyr Asp Glu Phe Val Glu Asp Tyr Glu Pro Thr Lys Ala
            35   40   45
Asp Ser Tyr Arg Lys Lys Val Val Leu Asp Gly Glu Glu Val Gln Ile
        50   55   60
Asp Ile Leu Asp Thr Ala Gly Gln Glu Asp Tyr Ala Ala Ile Arg Asp
65   70   75   80
Asn Tyr Phe Arg Ser Gly Glu Gly Phe Leu Cys Val Phe Ser Ile Thr
                85   90   95
Glu Met Glu Ser Phe Ala Ala Thr Ala Asp Phe Arg Glu Gln Ile Leu
            100   105   110
Arg Val Lys Glu Asp Glu Asn Val Pro Phe Leu Leu Val Gly Asn Lys
            115   120   125
Ser Asp Leu Glu Asp Lys Arg Gln Val Ser Val Glu Glu Ala Lys Asn
        130   135   140
Arg Ala Glu Gln Trp Asn Val Asn Tyr Val Glu Thr Ser Ala Lys Thr
145   150   155   160

151

Arg Ala Asn Val Asp Lys Val Phe Phe Asp Leu Met Arg Glu Ile Arg
                165   170   175
Ala Arg Lys Met Glu Asp Ser Lys Glu Lys Asn Gly Lys Lys Lys Arg
            180   185   190
Lys Ser Leu Ala Lys Arg Ile Arg Glu Arg Cys Cys Ile Leu
        195   200   205

        <210> 133
        <211> 431
        <212> PRT
        <213> Homo sapiens

        <400> 133
Met Met Arg Gln Arg Gln Ser His Tyr Cys Ser Val Leu Phe Leu Ser
1   5   10   15
Val Asn Tyr Leu Gly Gly Thr Phe Pro Gly Asp Ile Cys Ser Glu Glu
            20   25   30
Asn Gln Ile Val Ser Ser Tyr Ala Ser Lys Val Cys Phe Glu Ile Glu
        35   40   45
Glu Asp Tyr Lys Asn Arg Gln Phe Leu Gly Pro Glu Gly Asn Val Asp
    50   55   60
Val Glu Leu Ile Asp Lys Ser Thr Asn Arg Tyr Ser Val Trp Phe Pro
65   70   75   80
Thr Ala Gly Trp Tyr Leu Trp Ser Ala Thr Gly Leu Gly Phe Leu Val
            85   90   95
Arg Asp Glu Val Thr Val Thr Ile Ala Phe Gly Ser Trp Ser Gln His
            100   105   110
Leu Ala Leu Asp Leu Gln His His Glu Gln Trp Leu Val Gly Gly Pro
        115   120   125
Leu Phe Asp Val Thr Ala Glu Pro Glu Glu Ala Val Ala Glu Ile His
    130   135   140
Leu Pro His Phe Ile Ser Leu Gln Gly Glu Val Asp Val Ser Trp Phe
145   150   155   160
Leu Val Ala His Phe Lys Asn Glu Gly Met Val Leu Glu His Pro Ala
            165   170   175
Arg Val Glu Pro Phe Tyr Ala Val Leu Glu Ser Pro Ser Phe Ser Leu
            180   185   190
Met Gly Ile Leu Leu Arg Ile Ala Ser Gly Thr Arg Leu Ser Ile Pro
        195   200   205
Ile Thr Ser Asn Thr Leu Ile Tyr Tyr His Pro His Pro Glu Asp Ile
    210   215   220
Lys Phe His Leu Tyr Leu Val Pro Ser Asp Ala Leu Leu Thr Lys Ala
225   230   235   240
Ile Asp Asp Glu Glu Asp Arg Phe His Gly Val Arg Leu Gln Thr Ser
            245   250   255
Pro Pro Met Glu Pro Leu Asn Phe Gly Ser Ser Tyr Ile Val Ser Asn
            260   265   270
Ser Ala Asn Leu Lys Val Met Pro Lys Glu Leu Lys Leu Ser Tyr Arg
        275   280   285
Ser Pro Gly Glu Ile Gln His Phe Ser Lys Phe Tyr Ala Gly Gln Met
    290   295   300
Lys Glu Pro Ile Gln Leu Glu Ile Thr Glu Lys Arg His Gly Thr Leu
305   310   315   320
Val Trp Asp Thr Glu Val Lys Pro Val Asp Leu Gln Leu Val Ala Ala
            325   330   335
Ser Ala Pro Pro Pro Phe Ser Gly Ala Ala Phe Val Lys Glu Asn His
            340   345   350
Arg Gln Leu Gln Ala Arg Met Gly Asp Leu Lys Gly Val Leu Asp Asp
        355   360   365
Leu Gln Asp Asn Glu Val Leu Thr Glu Asn Glu Lys Glu Leu Val Glu
    370   375   380

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Gln Glu Lys Thr Arg Gln Ser Lys Asn Glu Ala Leu Leu Ser Met Val
385                 390                 395                 400
Glu Lys Lys Gly Asp Leu Ala Leu Asp Val Leu Phe Arg Ser Ile Ser
                405                 410                 415
Glu Arg Asp Pro Tyr Leu Val Ser Tyr Leu Arg Gln Gln Asn Leu
                420                 425                 430


        <210> 134
        <211> 672
        <212> PRT
        <213> Homo sapiens


        <400> 134
Met Gly Val Gly Arg Leu Asp Met Tyr Val Leu His Pro Pro Ser Ala
 1               5                   10                  15
Gly Ala Glu Arg Thr Leu Ala Ser Val Cys Ala Leu Leu Val Trp His
                20                  25                  30
Pro Ala Gly Pro Gly Glu Lys Val Val Arg Val Leu Phe Pro Gly Cys
        35                  40                  45
Thr Pro Pro Ala Cys Leu Leu Asp Gly Leu Val Arg Leu Gln His Leu
        50                  55                  60
Arg Phe Leu Arg Glu Pro Val Val Thr Pro Gln Asp Leu Glu Gly Pro
65                  70                  75                  80
Gly Arg Ala Glu Ser Lys Glu Ser Val Gly Ser Arg Asp Ser Ser Lys
                85                  90                  95
Arg Glu Gly Leu Leu Ala Thr His Pro Arg Pro Gly Gln Glu Arg Pro
                100                 105                 110
Gly Val Ala Arg Lys Glu Pro Ala Arg Ala Glu Ala Pro Arg Lys Thr
        115                 120                 125
Glu Lys Glu Ala Lys Thr Pro Arg Glu Leu Lys Lys Asp Pro Lys Pro
        130                 135                 140
Ser Val Ser Arg Thr Gln Pro Arg Glu Val Arg Arg Ala Ala Ser Ser
145                 150                 155                 160
Val Pro Asn Leu Lys Lys Thr Asn Ala Gln Ala Ala Pro Lys Pro Arg
                165                 170                 175
Lys Ala Pro Ser Thr Ser His Ser Gly Phe Pro Pro Val Ala Asn Gly
                180                 185                 190
Pro Arg Ser Pro Pro Ser Leu Arg Cys Gly Glu Ala Ser Pro Pro Ser
        195                 200                 205
Ala Ala Cys Gly Ser Pro Ala Ser Gln Leu Val Ala Thr Pro Ser Leu
        210                 215                 220
Glu Leu Gly Pro Ile Pro Ala Gly Glu Glu Lys Ala Leu Glu Leu Pro
225                 230                 235                 240
Leu Ala Ala Ser Ser Ile Pro Arg Pro Arg Thr Pro Ser Pro Glu Ser
                245                 250                 255
His Arg Ser Pro Ala Glu Gly Ser Glu Arg Leu Ser Leu Ser Pro Leu
                260                 265                 270
Arg Gly Gly Glu Ala Gly Pro Asp Ala Ser Pro Thr Val Thr Thr Pro
        275                 280                 285
Thr Val Thr Thr Pro Ser Leu Pro Ala Glu Val Gly Ser Pro His Ser
        290                 295                 300
Thr Glu Val Asp Glu Ser Leu Ser Val Ser Phe Glu Gln Val Leu Pro
305                 310                 315                 320
Pro Ser Ala Pro Thr Ser Glu Ala Gly Leu Ser Leu Pro Leu Arg Gly
                325                 330                 335
Pro Arg Ala Arg Arg Ser Ala Ser Pro His Asp Val Asp Leu Cys Leu
                340                 345                 350
Val Ser Pro Cys Glu Phe Glu His Arg Lys Ala Val Pro Met Ala Pro
        355                 360                 365
Ala Pro Ala Ser Pro Gly Ser Ser Asn Asp Ser Ser Ala Arg Ser Gln
        370                 375                 380
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Glu Arg Ala Gly Gly Leu Gly Ala Glu Glu Thr Pro Pro Thr Ser Val
385                 390                 395                 400
Ser Glu Ser Leu Pro Thr Leu Ser Asp Ser Asp Pro Val Pro Leu Ala
                405                 410                 415
Pro Gly Ala Ala Asp Ser Asp Glu Asp Thr Glu Gly Phe Gly Val Pro
                420                 425                 430
Arg His Asp Pro Leu Pro Asp Pro Leu Lys Val Pro Pro Pro Leu Pro
            435                 440                 445
Asp Pro Ser Ser Ile Cys Met Val Asp Pro Glu Met Leu Pro Pro Lys
        450                 455                 460
Thr Ala Arg Gln Thr Glu Asn Val Ser Arg Thr Arg Lys Pro Leu Ala
465                 470                 475                 480
Arg Pro Asn Ser Arg Ala Ala Ala Pro Lys Ala Thr Pro Val Ala Ala
                485                 490                 495
Ala Lys Thr Lys Gly Leu Ala Gly Gly Asp Arg Ala Ser Arg Pro Leu
            500                 505                 510
Ser Ala Arg Ser Glu Pro Ser Glu Lys Gly Gly Arg Ala Pro Leu Ser
        515                 520                 525
Arg Lys Ser Ser Thr Pro Lys Thr Ala Thr Arg Gly Pro Ser Gly Ser
        530                 535                 540
Ala Ser Ser Arg Pro Gly Val Ser Ala Thr Pro Pro Lys Ser Pro Val
545                 550                 555                 560
Tyr Leu Asp Leu Ala Tyr Leu Pro Ser Gly Ser Ser Ala His Leu Val
                565                 570                 575
Asp Glu Glu Phe Phe Gln Arg Val Arg Ala Leu Cys Tyr Val Ile Ser
            580                 585                 590
Gly Gln Asp Gln Arg Lys Glu Glu Gly Met Arg Ala Val Leu Asp Ala
        595                 600                 605
Leu Leu Ala Ser Lys Gln His Trp Asp Arg Asp Leu Gln Val Thr Leu
        610                 615                 620
Ile Pro Thr Phe Asp Ser Val Ala Met His Thr Trp Tyr Ala Glu Thr
625                 630                 635                 640
His Ala Arg His Gln Ala Leu Gly Ile Thr Val Leu Gly Ser Asn Gly
                645                 650                 655
Met Val Ser Met Gln Asp Asp Ala Phe Pro Ala Cys Lys Val Glu Phe
                660                 665                 670

        <210> 135
        <211> 6
        <212> PRT
        <213> Artificial Sequence

        <220>
        <223> epitope tag HIS6

        <400> 135
His His His His His His
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